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### "FIFTY YEARS IN A CHANGING WORLD": THE BRITISH MEDICAL ASSOCIATION IN AUSTRALIA.

By R. SCOT SKIRVING,  
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LIKE Robert Louis Stevenson in "Underwoods", I have taken part of the title of this contribution to the celebration of the centenary of the British Medical Association from Sir Valentine Chirol's interesting book, "Fifty Years in a Changing World", which I read some little time ago and from which I shall later quote, as well as I can remember, several passages.

When the Editor of THE MEDICAL JOURNAL OF AUSTRALIA asked me to write a paper dealing with the centenary, I agreed to do so rather unwillingly, for I found a difficulty in knowing how to treat the subject suggested, namely, the history of the

British Medical Association in Australasia. I did not, indeed, possess the necessary knowledge, and moreover, it had already been done efficiently by Robert Todd. I soon found that I had better confine my attention to the inception of the New South Wales Branch only, where I felt myself on fairly familiar ground; and this I propose to do, for I think the stories of the individual Branches elsewhere are best left to men who live in the various parts of Australasia and who can best tell their own tale. In New South Wales it is otherwise, for though I cannot claim the honour of being a founder, at least I knew personally nearly all who were.

The aims and objects of our founders were practically the same as those of the parent Association a hundred years ago, the founder of which was Sir Charles Hastings, whose pleasant face looks to us each week from the cover page of the *honae* journal. Here, of course, in new lands, with more parochial

limitations of population, other problems, special and domestic, arose, which the corporate judgement of a local association was specially useful in helping to solve. But whatever might be the local setting or the local question, the spirit of the founders in the homeland remained here unaltered. "*Sidere mens eadem mutato*" was as much their motto as that of the young University of Sydney. I never read that motto, itself an adaptation from Horace (you all probably know it: *Coculum non animum mutant qui trans mare currunt*) without repeating Sir Alfred Stephens's free rendering of its meaning:

Here from the parent land divided far,  
For us, her children, shines no better star;  
Changed are the skies, not so the British name,  
Nor mind, nor heart—which still remain the same.

Nor do I think in these fifty years that in any essential have we deviated from the original plans and aims of the founders of a century ago. The influence of the British Medical Association has, I think, been helpful to all of us, but it has, I believe, been of especial value in moulding for good the lives of the rising generations of medical men. Some rather unfriendly folk have called us a trades union; I do not wholly object to the accusation, but I do object when it is further hinted that we follow in the footsteps of the later exponents of a trades unionism run riot. I certainly do not share such a view. When a young doctor is just qualified, his troubles begin. He has to earn a living, and to earn it honestly. He has only, so far, a general knowledge of his profession and a licence to practise, but he is daily and hourly in misdoubt when the day comes to shoulder alone the responsibilities of life and death. He has also to keep the school learning he has gained, and to keep it he must remain not only a student of books, but of disease at the bedside, till the end of his working life; or else he falls by the wayside and becomes a menace to the public and a shame to his more industrious brethren. One of the best ways of "keeping fit" professionally is by joining the British Medical Association and attending its meetings. Many difficulties, other than those purely professional, crop up in every doctor's life, and most of them are rightly solved by common sense, by the written or unwritten rules of the Association, but most of all by the consensus of right conduct which it is the function of the Branch to teach by precept and example, as well as by a sort of unseen but ever present discipline of its members. That type of influence has a definite result on conduct and character, and comes early and by degrees in forming the careers of the rising generation; and nowhere may it be learned better than by means of an early acquaintance with the practice and aims of the Association. Indeed, such influence and schooling are salutary and supporting, for they make for the best type of professional conduct, they teach honesty of purpose, respect for the viewpoints of others in a profession where there be many gins and pitfalls to trip up the unwary or the weak. It is, in fact, no more

than a worldly wisdom to become a member, for any doctor, however righteous or well knowledgeable professionally, may be tripped up by some catastrophe, legal or otherwise, and "in the stress of the soul's worst weather" he will find the value of the corporate moral support of his brethren, if he merit it, a very present help in trouble. So again I urge all young graduates to join. The future of the educated classes, and especially the learned profession to which we belong, is, I fear, exposed to many dangers, not the least of which is its so-called nationalization, whatever that may mean, in its menace to the well-being of all its members, and still more surely as a bar to its advance as a science and an art. There is already a sufficient complement of men who are whole-time servants of the State, and they do their work, usually of a special kind, well and admirably, both to the public and for the advance of the special work they profess. So far so good. But if all medical men were public servants? What then? I fear human nature is weak and most of us would do just as little as required for the public, and probably still less for our own professional improvement and the advance of science as a whole.

The influence of the British Medical Association in resisting such sinister changes is greater from force of numbers, so again I commend the youth of the profession to join up. As, I suppose, I must have often said elsewhere, the foregathering of the members in meetings, which is part of the practice of the British Medical Association, certainly works for good on the whole. Such meetings may have their drawbacks, for mutual admiration societies are not unknown, nor are practitioners who, by a profuse flow of premeditated platitudes, just talk themselves into practice, and their writings are not seldom even as the paper tokens of an inflated currency. Nevertheless these meetings of members, probably 75% of them, do infinite good individually and collectively. Therefore, go to them. There men get to know one another, and as most people happily have some sweet reasonableness in their cosmos, asperities are often softened by personal contact. We are shown new angles of vision, we learn to express ourselves in public, with clarity, moderation and, I pray also, with brevity. Indeed, perhaps I forget as many advantages as I have here remembered. So once more I say join; and that, too, for righteous reasons and not for coercion or tyranny to those who do not do so. All are free and equal—just members of the brotherhood of medicine—for remember that the British Medical Association does not penalize a free and unattached member of the profession to which we all belong, as has been unhappily too often the custom elsewhere in other occupations.

The world one hundred years ago, in 1832, was not so complicated a place as, unhappily, it is today. Great evils and injustices existed; "man's inhumanity to man" was much in evidence. Many of these evils have been more than righted today. Yet peace and contentment do not apparently reign

to any greater extent in the breasts of nations or individuals. William IV sat on the throne of Britain. Legalized slavery was being abolished. The Liverpool and Manchester railway had been built. Neither the electric telegraph nor photography were known. Medicine and surgery had not notably advanced since Hunter and Jenner had done their work. The industrialization of our nation had begun and scattered about rural England were already some of those "dark satanic mills" about which the mystic William Blake had recently written and which so greatly altered the life of our people. Forty-eight years later, in Australia, in these distant colonies, branches of the parent Association were being formed. The Branch in Victoria was founded in 1879, in New South Wales and South Australia in 1880, in Western Australia in 1898, and in Tasmania in 1911. I am ignorant of the year in which New Zealand formed its Branch.

Our Branch, which is, of course, my theme, you will see has therefore reached its fifty-second year of being. Who were the men who had the vision to found it? I propose only to speak particularly of a few of those whom I knew personally, and so others, who might well be commemorated here, I omit, not indeed because they do not deserve mention, but because space does not allow me. So far as I know, there were forty-two members on the first roll. I fear none now are alive. The last to die were Andrew Brady, the doyen of ear, nose and throat work in Sydney, and Dr. W. E. Warren. The former, after years of general work, became a specialist, and was justly regarded as the Nestor of his branch of surgery. He was deeply respected by his colleagues.

On the whole, of the actual founders, Frederick Milford seems to have been the most active, and all honour to him. In his day and generation he must have had a sound knowledge of his profession, but in later years he had rather crystallized in his methods and seemed not willingly to march with the times. And 1880 was a time when the pot of medicine and surgery in Sydney was boiling over with new knowledge. Lister's teaching had taken hold, the beginnings of a great medical school and the establishment of modern training schools for nurses had quickened the minds and leavened the practice of all those whom age or receptivity made anxious to avail themselves of modern ideas in scientific medicine and correct technique. Milford must be remembered by all early Sydney graduates as their lecturer in surgery, and about whom were told many quaint and kindly stories. He was a keen yachtsman, absolutely devoid of physical fear, transparently honourable, but occasionally wrong-headed. He was a fine manly fellow, and I remember him with respect and affection.

Alfred Roberts does not need a long reference here, for his name is so linked with the Royal Prince Alfred Hospital that it is in itself an enduring monument to his single-hearted devotion to a great object. Roberts was a most careful surgeon, conservative, of course, unworldly about money, but perhaps a little too attentive to social preciousness

of manner and speech. But it was a good fault, never more so than now, in these days of slipshod talk and indifferent manners. At times perhaps he was a little small, but he was always a man with an ideal and a purpose, and we ought to remember him with gratitude and respect.

Phillip Sydney Jones was to me the best type of great doctor before the vastness of medicine made specialism a necessity and cut up the work of medical men into compartments, for he combined the best qualities of heart and mind and was, in addition, a competent surgeon and a fine physician. He and Frederick Norton Manning, who largely made the lunacy service of New South Wales what it is, represented to me in those days the fine flower of the profession. I remember Manning, although I am not sure whether he was actually on the first list of members. I class with them Joseph Verco, of Adelaide, still happily with us. They all had acquired learning, and what is even better, they possessed wisdom.

Knowledge and Wisdom far from being one,  
Have oft-times no connection. Knowledge dwells  
In heads replete with thoughts of other men;  
Wisdom in minds attentive to their own.  
Knowledge is proud that he has learned so much;  
Wisdom is humble that he knows no more.

Nor here should I omit dear George Fortescue, with his fine presence and arresting personality. If he had practised in London and had had the stimulus of high competition and the intellectual atmosphere of a great medical centre, surely would he have been a leading light therein. Charles Mackellar too, I think, would have taken an outstanding position in any British medical sphere of practice. Quaife and Mackenzie, McKay, Marshall and Moffat were wonderful general practitioners, wise, shrewd and stuffed with experience. James Cox ought also to be mentioned—"Bonny Cox", as old Mrs. Porter (the famous staff nurse of Syme and Lister in the Edinburgh Infirmary) called him to me thirty years after Jimmy Cox had returned to Australia. He became lecturer in medicine in the University of Sydney, and my predecessor at the Australian Mutual Provident Society. Of him also are told many merry and kindly stories. All these men served their day well and were a credit to our profession.

Normand Maclaurin, another original member, came to Sydney, I think, first as a naval surgeon. He settled in practice and in later years distinguished himself in various non-medical directions, for he became quite a personage in New South Wales as Chancellor of the University, a member of the Upper House, and chairman of several important financial undertakings. Many of my readers probably knew him, for he died well within the memory of fairly recent graduates.

Thomas Fiaschi, at that time quite a young man, was, as was natural then as later, an active spirit in all that made for the advancement of the profession he adorned. I shall say nothing further of him, for we all knew him, and I have elsewhere said my say about him.



I feel I ought to make an end of these "biographettes" of our founders, but there is one indeed who cannot be omitted, for in scientific fame he stands far above all the others. Perhaps it is not too much to say, certainly of one who was in active practice and did not hold a professorial post, that George Bennett was the most distinguished scientist Australia has produced, for he spent practically all his working life as a practising medical man in Sydney. I wish Norman Dunlop had written a memoir concerning him, as he was so well qualified to do. It is needed, for, I fear, to our younger members he is hardly a name, and perhaps now also even to many of the seniors; it is sad how soon we forget a great man and are even as those of old who "entertained an angel unawares". I wish I had seen more of him. Indeed, I saw him only towards the end of his long and distinguished career, and then as a patient, in consultation, I thought, with John Mildred Creed, also a founder, and a man extraordinarily widely read and with a most agile brain. I found later that it was Dr. W. H. Goode whom I had met, and not Dr. Creed. Dr. Goode, also a founder, was originally a naval surgeon, but, settling in Sydney, he became surgeon to the Prince Alfred Hospital when I was its Medical Superintendent. Goode was also Lecturer in Medical Jurisprudence and Public Health at the University. He was much loved, for he was a very kind, learned man, and always championed the underdog. Do not confuse Dr. George Bennett, of Sydney, with Dr. Frederick Bennett, I think his brother, who about ninety years ago wrote a book on whaling, which, with Bullen's "Cruise of the Cachalot", remain as the two best accounts of sperm whaling in our language, in the vanished days of that picturesque sea-hunting. Our Dr. Bennett wrote much, but not this book on hunting whales. He was born in Plymouth in 1804 and quite early took to sea travelling. Later, he studied medicine and ultimately became M.D. of Glasgow and Fellow of the Royal College of Surgeons of England. In 1828 he was surgeon and naturalist in the exploring ship *Sophia* in the Pacific, and first visited Sydney in 1829. Two years later he was again in Sydney and spent seven months in the scientific survey of the Tumut and Murrumbidgee districts. After further journeyings in the East, he published his "Wanderings of a Naturalist", and later, his book on the platypus. In 1835 he settled down in Sydney to practise his profession, but still found time to work at natural history in several of its branches and to fill various positions here in connexion with them. Besides his larger books, he was the author of many observations and pamphlets on such diverse subjects as influenza in sheep, acclimatization, and the cultivation of citrus fruits. Richard Owen's memoir on the "Pearly Nautilus" was based on a specimen of the actual animal sent to him by Bennett, who had obtained it in the New Hebrides when serving on the *Sophia*. Nor did he forget his own profession, for his papers on medical subjects, "alas too few", were thoughtful and good. He was

rightly the recipient of many honours, and died in William Street—I remember the house well—in September, 1893. His death certificate, signed by W. H. Goode, states that "albuminuria and bronchitis" were the terminal ailments. I remember the bronchitis, but had forgotten the albuminuria.

Such, then, were some of those who, fifty odd years ago, founded our Branch in Sydney. Of others who were among the earliest members, and of the profession generally at that time in New South Wales, I think it may justly be said that they were for the most part good, capable practitioners, with, of course, a moderate number of "conies" among them and a very few black sheep—a ratio which in our profession was probably smaller, I believe, than in any other equal number of persons of whatever occupation, for in truth the gaining of a diploma in medicine, then as now, at least demands certain qualities of brain, perseverance, general learning and decency of conduct not actually necessary in various other occupations. I am even tempted to instance that of those who propose to themselves a parliamentary career.

These men of our guild were a sturdy breed, whether born here or in the homeland, and they planted well and lived hard, laborious lives. They thus created a heritage for us who came later and, I think, in a number of ways, have led softer lives. "Courage and faith" they had and gave "vain faith and courage vain"! If we who follow them fail in work, in duty, and in loyalty to ideals and thereby miss rising above the poison and destructive influences which today are so rife. This, then, is part of our duty as members of a great profession and a great Association: to work hard, not indeed alone for our own personal gain, but for the common welfare of all; to do justly and honestly by our patients, who commit their lives to our keeping—a great trust; to remember our debt to our profession, whereby we live; and so, according to our bent and gifts, to try to add something, however small, to the scientific capital of our art, and so help in the relief of human ills. Whatever evils have overtaken our times, let us remember with joy and pride what glorious advances in medicine have happened before our very eyes in the fifty-two years since this Branch was formed. The principles and practice of anti-septic and aseptic surgery have become universal. The knowledge of the causation and, I may say, the cure of many diseases by bacterial agencies are known to all. The physiology and therapeutic uses of internal secretions and new remedies gained by abstruse chemical research are employed. The use of electricity in many ways, notably in radiology, radium and all it does and may yet connote, are really miracles of science. These are among the most dramatic and arresting of the advances made during these changeful fifty years. One wonders what will be the position of human knowledge fifty years on, if any civilization still exists, even if, alas, we also remember that many of the best of a whole generation of the young and brave were cut off in the flower of their years by the tragedy of the Great



War. What untold, unimagined dividends of knowledge perished undeclared on the far-flung battlefields of 1914 to 1918!

I spoke of Valentine Chirol's book. In it he sums up the position today so much as I also see it that I shall in the next few paragraphs try to quote him from memory.

"Never again", he says, "will any war-lord in shining armour boast, as the deplorable William II did, in the first few weeks of the Great War, when the German armies were closing on Paris, that 'it was a bright and cheery war'." We comforted our lacerated hearts then, and later, by saying that this war would end all others. Has it done so? Even if it ended the causes of war common in the past, the world will not be "safe for democracy", for democracy now has put on a new dress, not any longer of the old sane brand. Apparently even fiercer struggles "are likely, under a new alignment of class or racial combat". We in Australia no longer live in an isolated outpost of Empire. The rapidity of transit and communication of ideas have shrunk the boundaries of space and so made smaller this difficult and dishevelled world. "What happens on the other side of it repercusses instantly here, and makes us sharers in the throes of what may be a new birth or a downfall." I wonder which. Surely, let us hope, we shall not "let clamorous demagogues betray our freedom with the kiss of anarchy".

The world, then, which emerged from the Great War was not by any means "a world safe for democracy" or "fit for heroes to live in". Quite otherwise! But rather one where no one was satisfied, one "which had awakened everywhere to a consciousness that something was amiss with a civilization which had allowed itself to reap such an appalling harvest of misery and ruin". Many of our best men had died, many of those who survived were silent, while various panacea-mongers had nothing to offer their bleeding countries but further destruction, class warfare, and all the evils which follow that disaster. Few of these patriots, I notice, seem to have risked their skins when any fighting was about. It is not too much to say that civilization itself is in the melting pot. We men of medicine are deeply concerned in all this, for, to my thinking, and I stress the point, one of the corner stones of modern civilization, one of the factors which made the latter what it is at its best, is no less than the influence of medicine and the righteous practice thereof. This statement is a large one, but I believe the more we study history, the more it will be realized how great a part medical knowledge and the use of it by our profession have played in the stability of the fabric of an ordered, sane and altruistic world.

Perhaps, indeed, we even now stand at the parting of the ways, so we ought to remember that anything which degrades the highest level of heart or brain in our profession, will also help to drag down civilization as well—even as earlier cults perished

in misery and ruin. Among the signs of the times "one sees a heavy cloud of crude materialism showing itself equally in a selfish craze for rather base amusements, or a fanatical desire for sheer destruction which would pull down most things which are best in what we have yet attained, without any demonstration of capacity to better it". Happily, however, here and there we can see an idealism still alive, which, notwithstanding all that has happened, and is still happening, has not yet been crushed out, but rather tries to quicken into a new life. From this little spark of everlastingness let us hope happier things may grow, "though perhaps in terms a pre-war world would hardly have known how to construe". But the path to betterment is full of peril, I fear it is hard and long, for violence and contempt of much of a splendid past are, it might seem, often carried by certain sections of the rising generation, especially the most ignorant, to pathological extremes in art, literature, politics and religion. Most of us doctors would regard these outbursts as not so much a sign of renewed vitality, but rather a syndrome of feverish decay. The outcome, then, of all this pullulation of so many half-baked theories and practices is hard to foretell, and the future is full of menace. It is, I fear, a somewhat tragic world just now, especially to those of us who are no longer young, and even to the young who possess some "sweetness and light" and a share of common sense, although they knew not a mellower age, it must be difficult and hard to understand. They have too often lost their birthright of wholesome, joyous youth, "and are called to a conflict beyond their years" and out of due season. Still, it is an interesting world, even if a somewhat fearful place to live in. I shall not live to see the issue "of the pitched battle between material and spiritual energies striving after some vital adjustment of what was old and is new", and of good and of evil, so I confess I often "find it hard to find a comforting factor amid these present cataclysms and portents in the ultimate future of civilization" and of one of its handmaids, the glorious profession of medicine.

And now I must make an end, else I utterly weary you. For myself, by blood and temperament, I fear I am more inclined to finish my survey in a pessimistic vein; yet, indeed, I do not wish to do so. Although the history of the world and that of all great empires and even all great religions tell the same story of growth, stability and decline, yet our Empire for centuries has, so far, stood the shock of outside disintegrating forces and still carries a high heart to many adverse winds. But what of white-anting from within? I wonder, with as much fear as hope, what is to be its future and the fate of civilization and of our profession, which, as I have already said, is one of its props.

Yet I would hope, too, for even as in the dark, silent, dank underlife of an Amazonian forest, where gloom, decay and noisome growths are the prevailing features, the trees, at least the fittest, strive to reach the free bright upper air, where, one is told

by aviators, they see instead a carpet of tossing green swaying in the sunlit atmosphere, a kind of mosaic of varied tints, fragrant with scented blossoms and vocal with bright feathered birds. So, pursuing this imagery, may we not too, as a people, rise again from our present slough of despond and reach an upper region of freedom and hope, where, indeed, we may once more feel that these present fears and doubts are left behind; that opportunity has again come to those who seek and strive to use it, and that honour, industry and loyalty are not mere words; that in the land we live in, men of all sorts may once more "see the stars and feel the free shrill air" of hope, confidence, progress and success. May such things be.

#### Acknowledgement.

In compiling this paper I beg to acknowledge the help given me by the staff of the Mitchell Library, the Public Library and Mrs. W. H. Goode.

#### POST-OPERATIVE "PNEUMONIA" WITH REPORT OF FOUR CASES.<sup>1</sup>

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#### INTRODUCTION.

THE investigation discussed here originated through the author's meeting, after a lapse of five years, with three cases of so-called "post-operative pneumonia" subsequent to abdominal operation, within the space of seven days.

Post-operative "pneumonia" is of great interest to both surgeons and anaesthetists; for pulmonary complications constitute a serious menace to patients who have undergone successful operation.

The first symptom may occur a few hours after operation, or not until after many days, but the onset is rarely earlier than twenty-four hours or later than five days after operation. Its incidence will vary with the number of consecutive severe surgical operations performed in a particular clinic. According to British and American figures, the morbidity rate varies from 0.5% to 10.5%, and of the patients affected, between 40% and 60% die. Cutler and Hunt state that approximately one patient in every fifty operated upon develops a lung complication, and one in every one hundred and eighty-five die from some such complication.

The clinical picture of these cases of so-called post-operative pneumonia is so unlike true lobar pneumonia as seen by the physician, that it is strange that this diagnosis has been so complacently accepted up to the present time.

Most surgeons recognize two main types, apneumatoses and bronchopneumonia; but in addition to these standard varieties, terminal lobular pneumonia in exhausted patients, hypostatic pneumonia, suppurative embolic pneumonia, and suppurative

aspiration pneumonia following operations on the air passages, also occur. Furthermore, although bronchopneumonia may be activated in lungs which have recently been the seat of inflammatory disease, lobar pneumonia is distinctly uncommon, being almost limited to post-operative pneumonia occurring in epidemics.

When such an epidemic breaks out in a ward, the only reliable method of terminating it is to refrain from performing abdominal operations until every patient in whom such a complication has occurred has left the hospital.

#### REPORTS OF CASES.

CASE I.—R.W., a male, aged forty-nine years, and weighing 56 kilograms (nine stone), was examined clinically and radiologically before operation. No abnormality in lungs or heart was detected. On May 18, 1932, an operation consisting of posterior vertical no-loop gastro-enterostomy and sequestration of duodenal ulcer was performed. Open ether anaesthesia was employed, after preliminary basal narcotization with 5.7 cubic centimetres of "Avertin" solution. Induction was accompanied by persistent coughing. Two hundred mls (seven fluid ounces) of ether were used. In addition, eight grammes (two drachms) of glucose by mouth were given before operation, and 0.011 gramme (one-sixth of a grain) of morphine hypodermically after operation.

The temperature was elevated to 37.8° C. (100° F.) from noon on May 19 until midday on the following day, when it fell to normal. On May 20, between 2 a.m. and 4 a.m., the patient became collapsed, clammy and cyanosed. The pulse rate rose from 100 to 132 per minute, and the respiration rate from 26 to 34.

At 8 a.m. the temperature was 37.4° C. (99.4° F.), the pulse rate was 122 and the respiration rate 30 per minute. The right side of the chest was immobile in its lower half; the percussion note was dull and breath sounds were absent over the lower lobe, where vocal resonance was also lost.

The right limit of cardiac dulness by percussion was 6.8 centimetres (two and three-quarter inches) from the median plane, and the left 3.75 centimetres (one and a half inches). Carbon dioxide in oxygen (one in ten) was administered every four hours, for three minutes.

At 4 p.m. the temperature was 37.4° C. (99.4° F.), the pulse rate was 112 and the respiration rate 30 per minute. The lung condition appeared to be unchanged. The right border of the heart was now 3.75 centimetres (one and a half inches) from the median plane, and the left 6.8 centimetres (two and three-quarter inches).

On May 21, at 10 a.m., the temperature was 37.2° C. (99° F.), the pulse rate was 112 and the respiration rate 30 per minute. The lung condition appeared to be unchanged, except that now there was slight movement of the right lower part of the chest wall. The left limit of cardiac dulness was now 10 centimetres (four inches) from the median plane. Ten cubic centimetres (three fluid drachms) of thick, viscid, muco-purulent expectoration had been expectorated in the previous twenty-four hours.

On May 22 the temperature was 36.9° C. (98.4° F.), the pulse rate was 90 and the respiration rate 24 per minute. The right side was moving better. The right lower lobe was still dull, but breath sounds were now intensely tubular and whispering pectoriloquy could be heard.

On May 24 the temperature was 36.4° C. (97.6° F.), the pulse rate was 80 and the respiration rate 22 per minute. Cough was troublesome. The percussion note over the right lower lobe was dull, the note was impaired over the left lower lobe; patches of tubular breathing could be heard over both bases, with bubbling râles.

On May 28 the temperature was 37.2° C. (99° F.), the pulse rate was 80 and the respiration rate 20 per minute. The patient was comfortable and, excepting pain in the wound on coughing, complained of no abdominal discomfort. The stitches were removed. The wound was healed. The percussion note was still impaired at both bases, and there were patches of bronchial breathing and moist râles.

<sup>1</sup> Read at a clinical meeting of the staff of the New South Wales Community Hospital on July 7, 1932.

CASE II.—A.B., a male, aged sixty-four years, who weighed 50 kilograms (eight stone two pounds), gave no history of recent respiratory infection. Pre-operative radiological examination of the chest revealed no abnormality.

On May 20, 1932, gastro-enterostomy combined with gastrotomy (Nordenbos's operation) was performed under open ether anaesthesia following preliminary basal narcotization with 5.69 cubic centimetres of "Avertin" solution, for a large, inaccessible, penetrating gastric ulcer high up on the lesser curvature of the stomach and adherent to the pancreas. One hundred and twelve mls (four fluid ounces) of ether were given. Before operation, eight grammes (two drachms) of glucose were given by mouth; after operation heroine in a dose of 0.0054 gramme (one-twelfth of a grain) was given hypodermically. The immediate post-operative reaction was slight, and the patient was remarkably well and cheerful next morning.

On May 22, forty-eight hours after operation, the temperature rose to 38.3° C. (101° F.), the pulse rate to 132 and the respiration rate to 32 per minute. The patient had an occasional cough and the respiration was shallow. Fine crepitant râles were heard over the bases of both lungs behind. The limits of cardiac dullness were normal.

On May 23, at 10 a.m., the temperature was 36.7° C. (98° F.), the pulse rate was 112, and the respiration rate 32 per minute. The night's rest had been disturbed by an irritating and persistent cough accompanied by the expectoration of clear frothy mucus. Examination showed very deficient expansion, impairment of the percussion note, and masking of the breath sounds by abundant moist râles over both bases.

Carbon dioxide in oxygen (10%) was ordered to be administered for three minutes every three hours. The patient had frequent hæmoptysis during the day, expectorating about 28 mls (one fluid ounce) of blood in all.

On May 24, at 10 a.m., the temperature was 37.2° C. (99° F.), the pulse rate was 120 and the respiration rate 26 per minute. The respiration was still shallow; the lips and finger nails were cyanosed. The sputum was now rusty coloured. The examination of the chest revealed essentially the same signs as on the previous day.

On May 25, at 4 a.m., the temperature was 38.3° C. (101° F.), the pulse rate was 120 and the respiration rate 28 per minute. The cough had been troublesome during the previous night, and the patient had experienced difficulty in expectorating the rusty tenacious sputum. He had been delirious for the previous two hours and had been trying to take off the bed-clothes. At 7 a.m. his condition became rapidly worse, and at 8 a.m. there were mucous rattles and wheeziness in the chest. The pulse became small and feeble and could not be counted. The patient died at 9 a.m.

CASE III.—A.E.B., a male, aged forty-nine years, who weighed 97 kilograms (fifteen stone six pounds), gave a history of post-operative "pneumonia" following both appendectomy in September, 1923, and valvular caecostomy in November, 1923; in each case the operation had been performed under open ether anaesthesia.

On May 26, 1932, excision of caecostomy and repair of right iliac incisional hernia by an anatomical reconstruction method (defining and suturing each individual layer of abdominal wall) were performed under open ether anaesthesia after preliminary basal narcotization with 9.6 cubic centimetres of "Avertin" solution. Induction was accompanied by persistent coughing. The amount of ether used was 170 mls (six fluid ounces) and chloroform 3.5 mls (one fluid drachm).

At the time of operation atropine in a dose of 0.65 milligramme (one one-hundredth of a grain) was given hypodermically; after operation heroine was hypodermically given in a dose of 5.4 milligrammes (one-twelfth of a grain).

With the exception of post-operative retention of urine, lasting for seventy-two hours, the immediate post-operative reaction was slight.

On May 27, at 10 a.m., the temperature was 37.1° C. (98.8° F.), the pulse rate was 100 and the respiration

rate 24 per minute. Sleep amounted to only four hours, being disturbed by a short dry cough, dyspnoea and wheeziness in the chest. Rhonchial fremitus could be felt over the upper and anterior portions of the chest. Both lungs were equally resonant to percussion. The limits of the cardiac dullness were normal. Numerous fine bubbling râles were heard at both lung bases, and sibilant and sonorous rhonchi over the remainder of the chest.

Treatment included the administration of the customary expectorant mixture and carbon dioxide in oxygen (10%) for three minutes every three hours. By 6 p.m. the temperature had risen to 37.8° C. (100° F.), the pulse rate to 104, and the respiration rate to 24 per minute.

On May 28, at 10 a.m., the temperature was 37.3° C. (99.2° F.), the pulse rate 108 and the respiration rate 24 per minute. There had been about four hours of broken sleep. There was less wheezing and the cough was less troublesome. The patient was expectorating small quantities of thick viscid muco-pus. The chest condition was definitely improved as compared with the condition on the previous day.

On May 29 the temperature was 37.8° C. (100° F.), the pulse rate was 116 and the respiration rate 24 per minute. The patient had spent a fair night. The cough was "looser" and not so troublesome. There was a thick yellow green expectoration; 28 mls (one fluid ounce) had been voided in the previous twenty-four hours. The chest condition was improving. At 5 p.m. on this day the supply of carbon dioxide and oxygen mixture was finished and a new cylinder was unobtainable.

On May 30 the temperature was 37.6° (99.8° F.), the pulse rate 104 and the respiration rate 28 per minute. The patient was unable to sleep on account of cough and wheeziness in the chest. Heroine in a dose of 5.4 milligrammes (one-twelfth of a grain) was administered at midnight; the patient then slept for seven hours. The sputum was less, but was more difficult to expel. The temperature was changing from an intermittent to a remittent type. On examination the chest was essentially the same as on May 27. A new cylinder of "Carbogen" arrived at 10 a.m., and by 6 p.m. the patient felt much more comfortable.

On June 1 the temperature was normal, the pulse rate was 84 and the respiration rate 20 per minute. The patient felt comfortable, was sleeping well, and rapidly improving. Examination revealed that the chest condition was improving.

CASE IV.—C.H., a female, aged twenty-six years, who weighed 49 kilograms (seven stone eleven pounds), was examined clinically and radiologically before operation. No abnormality of chest or heart was disclosed.

On June 18, 1932, appendicectomy, combined with pleating and fixation of a mobile caecum, was performed under "machine" ether anaesthesia after preliminary basal narcotization with 5.5 cubic centimetres of "Avertin" solution. The quantity of ether used was 290 mls (six fluid ounces). Two hours subsequent to operation the patient developed a rigor lasting fifteen minutes and terminating in collapse. The respiration became laboured and the pulse imperceptible.

The customary treatment, consisting in the making of a "shock bed" and the rectal injection of saline-glucose solution, was initiated, and numerous hypodermic injections were given: surgical pituitrin (one cubic centimetre), *strychnine hydrochloridum* in a dose of 2.2 milligrammes (one-thirtieth of a grain), and "Digitalone" in a dose of 0.65 milligramme (one one-hundredth of a grain). When seen a quarter of an hour later, the patient was cold and clammy, and dusky in colour, and complained of severe pain in the right hypochondrium. Her temperature was 36.7° C. (98° F.) and her respiration rate was 20 per minute. Morphine in a dose of 0.011 gramme (one-sixth of a grain) was administered. At 5.30 p.m. on the same day her temperature was 38.3° C. (101° F.), her pulse rate was 116 and her respiration rate 24 per minute. She still complained of severe pain in the right hypochondrium. The heart was not displaced. Morphine in a dose of 0.008 gramme (one-eighth of a grain) was administered hypodermically. This was repeated six hours later. A mixture



of carbon dioxide in oxygen (5%) was administered for five minutes every three hours.

On June 19, at 3.15 p.m., a further rigor occurred when the patient was placed in a semi-recumbent position. The pain in the right side was still severe. The temperature was 38.9° C. (102° F.), the pulse rate 136 and the respiration rate 26 per minute. Mobility was restricted and vocal resonance was absent over the right lower pulmonary lobe; the percussion note was dull and the signs of air entry were weak over the same area. These signs were associated with fine inspiratory crepitations. The right limit of cardiac dullness to percussion was 5.6 centimetres (two and a quarter inches) from the median plane, and the left, five centimetres (two inches).

On June 20, at 9.30 a.m., the temperature was 37.8° C. (100° F.), the pulse rate 136 and the respiration rate 28 per minute. The patient complained of dragging pain and "stitch" in the right side of the chest. Dullness extended up to within 2.5 centimetres (one inch) of the surface marking of the oblique fissure of the lung. Faint breath sounds with crepitant râles could be heard over the right lower lobe. The left limit of cardiac dullness was now 7.5 centimetres (three inches) from the median plane, and the right, 3.1 centimetres (one and a quarter inches). The patient had neither cough nor expectoration. "Carbogen" was ordered to be administered for five minutes every two hours. At 6 p.m. of the same day the temperature was 39.2° C. (102.6° F.), the pulse rate 134 and the respiration rate 30 per minute. Although the patient felt better, the lung condition was unchanged.

On June 21, at 10 a.m., the temperature was 38.3° C. (101° F.), the pulse rate was 132 and the respiration rate 28 per minute. In spite of a restless night and slight secondary hæmorrhage from a silkworm gut stitch hole, the patient felt considerably better. The percussion note over the right lower lobe was still impaired. The breath sounds were plainly audible, but accompanied by numerous crepitant râles. The left limit of cardiac dullness was now 8.75 centimetres (three and a half inches) from the median plane. Silkworm gut stitches were removed, and the wound was dressed with "Clauden" gauze. Ten cubic centimetres of "Coagulen" were injected subcutaneously.

On June 22, at 5 p.m., the temperature was 37.8° C. (100° F.), the pulse rate 116 and the respiration rate 24 per minute. The patient had had a good night and felt comfortable. Although the percussion note over the right lower lobe was still slightly impaired, the breath sounds were normal and unaccompanied by any adventitious sounds. No sputum had been present throughout. There was still some slight oozing, which was checked by the insertion of a mattress suture under local anæsthesia.

On June 23, at 10 a.m., the temperature was 37° C. (98.6° F.), the pulse rate was 120 and the respiration rate 24 per minute. The patient felt well and there was no hæmorrhage. Except for slight impairment in the percussion note, the base of the right lung appeared to be normal.

#### APNEUMATOSIS.

In apneumatosi there is a deflation or collapse of varying degree of the alveolar tissue of the pulmonary lobes, a condition first described by Pasteur in 1908 as massive collapse of the lungs, and subsequently by Whipple, ten years later, as pneumonitis. The lung does not leave the chest wall, but merely occupies a smaller space than it did when fully expanded.

In his final paper in 1914 William Pasteur, of Middlesex Hospital, defined the massive or multilobular type as a total deflation (as opposed to a lobular or patchy collapse) of a large area of lung tissue, of sudden onset—in the absence of any sign of obstruction of the airway or of any known cause of compression—due to failure of inspiratory power and attended by definite symptoms and physical

signs. He furthermore described two well defined clinical types, one acute and the other latent.

The acute type may present a sudden initial dyspnoea, resembling pulmonary embolism, or, more commonly, a rapid but less dramatic onset suggesting pneumonia.

In the latent type there may be a complete absence of symptoms, although the physical signs are well developed. This variety often escapes recognition.

In extent the apneumatosi may be lobar, or the whole of one lung may be collapsed. In the partial type the lower or middle third of one or more lobes is the part most frequently affected.

#### SYMPTOMS AND SIGNS.

The symptoms and signs are as follows.

1. The onset is often sudden, occasionally accompanied by distress (pain, cyanosis and dyspnoea) on the first to the fifth (commonly the second) day. There is a characteristic absence of chill or rigor.
2. Respiratory movements of the chest wall over the affected region are diminished or absent.
3. The intercostal spaces are retracted and are very much narrower over the involved portion of the lung. The right lung, usually the lower lobe, is involved in 75% of cases.
4. The breath sounds are diminished over the collapsed area, the percussion note is dull, and tactile vocal fremitus is absent.
5. The heart is displaced towards the affected side and the apex beat may have shifted two or more inches. Pasteur believed this to be pathognomonic of the condition.
6. The sputum is viscid and scanty, or may be absent in the initial stages. Pneumococci (Group IV) can usually be grown from the sputum both before and after operation (Whipple).
7. The temperature, pulse rate and rate of respiration are raised. The temperature may fall by lysis after twenty-four hours. A rapid pulse rate would appear to be a premonitory symptom.
8. The dome of the diaphragm on the affected side is abnormally high and immobile.
9. There is compensatory emphysema of the unaffected lung.

The symptoms rapidly subside unless secondary bronchopneumonia develops; but this condition is quite likely to occur as a complication.

Later on the physical signs present great variation, the chest wall is not completely immobilized, the breath sounds become tubular or even bronchial, and vocal fremitus is increased. The cough is increased and there is expectoration of thick green mucoid or muco-purulent material, which, however, is never rusty coloured. The character of the sputum suggests infection, and this view is confirmed by microscopical examination.

Whatever the type of involvement, the duration is usually from one to three weeks. The condition may terminate rapidly by sudden reinflation or may require several weeks for complete recovery.

**Bronchoscopic Examination.**

There is great restriction of the bronchial movements, and the inspiratory lengthening and opening of the bronchus is very slight in the affected area. The bronchial mucosa of the involved segment presents pronounced inflammatory reaction (redness and thickening) and the walls are covered with a thick, adherent, tenacious secretion. Certain of the lower bronchial divisions may be completely filled with this tenacious exudate.

**Radiological Examination.**

Radiography corroborates most of the above-mentioned physical signs and is of the greatest aid when the lesion is on the left side, but unfortunately this accessory aid to diagnosis is rarely available. It has been observed by Morison that the collapsed region of the lung produces the following radiographic signs.

1. The site and extent of the lesion is denoted by a dense homogeneous shadow. The density of the shadow will vary with the degree of apneumatosi, and as air returns the opacity gradually disappears.
2. The mediastinum and its contents are displaced towards the affected side, the heart shadow being merged with that of the airless lung in the lower half of the hemithorax, thus giving an abnormal density. If the right upper lobe is alone involved there may be only displacement of the trachea.
3. The width of the chest cavity on the affected side is reduced, and there is narrowing of the rib interspaces.
4. Elevation and fixation of the dome of the diaphragm on the affected side occur, that is, fixation in the expiratory position, which is the position of rest.
5. There is compensatory emphysema of the unaffected lung.
6. Pendulum movements of the heart are seen in the later stages, when the immobilization of the chest wall is incomplete.

**PATHOLOGY.**

The involved portion of the lung is black or violet in colour, and sharply demarcated from the normal lung tissue. It is soft, tough and wet; it feels heavy, does not crepitate, and sinks when placed in water. Compression of the pulmonary tissue causes thick muco-purulent secretion to exude from the bronchioles.

Microscopically the alveolar surfaces are closely approximated, the alveolar spaces being obliterated. There is marked dilatation of the alveolar capillaries, and the smaller vessels of the lungs appear to be universally congested with red blood cells. The bronchioles contain exudate, which is moderately rich in fibrin, in the meshes of which are numerous polymorphonuclear and mononuclear leucocytes, generally completely plugging the bronchiolar lumen.

**DIAGNOSIS.**

The differential diagnosis must be made from lobar pneumonia, pulmonary infarction, pneumothorax and, possibly, acute dilatation of the heart.

Minor emboli give rise to a condition simulating apneumatosi. Whipple has given an excellent description of this condition, which he likens to a mild form of pneumonia.

The intrapleural negative pressure increases as the volume of the affected lung diminishes; hence, in cases of doubt, estimation of this pressure might be a simple and reliable clinical diagnostic procedure. Normally the intrapleural pressure varies from -9 millimetres of mercury on inspiration to -2 millimetres of mercury on expiration.

**ETIOLOGY.**

The cause of apneumatosi is still unsettled, but it would appear that every mechanism which could possibly bring about deflation has been evoked. A review of the literature reveals that the two main theories are apparently: first, some interference with respiratory movements, and, secondly, obstruction to the bronchial tree.

**The Theory of Failure of Respiratory Power.**

It has been suggested by Pasteur that apneumatosi may be due to the arrest (reflex) of action of one half of the diaphragm.

Muller, Overholt and Pendergrass have demonstrated that the normal pulmonary vital capacity is reduced 60% (80% according to Head)<sup>1</sup> during operations on the upper part of the abdomen, and 40% during operations on the lower part of the abdomen.

Radiography demonstrates that the diaphragm is often immobilized in the expiratory position, which is the position of rest.

On the other hand, phrenic evulsion is not followed by lobar apneumatosi; furthermore, Elliott and Dingley were unable, experimentally, to produce apneumatosi in animals, either by phrenicotomy or hemisection of the spinal cord at the second and third cervical segments.

More recently Lemon has shown that, although diaphragmatic excursion is affected after phrenicotomy, there is no influence on vital capacity.

In view of Muller, Overholt and Pendergrass's work in connexion with post-operative apneumatosi, the question should be asked, especially in regard to male patients with emphysematous chests, whether the old-fashioned dorsal recumbent post-operative position is not to be preferred to the modern semi-recumbent or Fowler's position. Boulton and Cheret claim that by placing the patient in the dorsal position and raising the foot of the bed some twenty inches (the so-called "postural drainage" position) for twenty-four hours, apneumatosi is avoided.

**The Theory of Bronchial Obstruction.**

Bronchial obstruction may arise through a combination of one or more of three factors.

1. *Inflammatory Oedema and Swelling of the Wall of the Bronchiole.*—Bronchoscopy reveals that the lumen of the bronchioles in the involved area may be narrowed owing to swelling of their walls, excited, possibly, by irritation of the anæsthetic vapour.

2. *Reflex Spasmodic Contraction of the Bronchiole Musculature* (Rose Bradford, Santee, Scott,

<sup>1</sup> This figure appears extreme.

Bergamini, Scrimger and others).—Macklin, who was the first to describe the lung as a "muscular organ", likened the bronchial musculature to a contractile net embracing the mucosa of the entire bronchial tree from the larynx to the alveolar mouths. Brodie and Dixon were able to produce bronchoconstriction by direct vagal stimulation; but why should the bronchioles of one particular lobe be affected to the exclusion of those of the other lobes? Furthermore, there is singularly little evidence that reflex spasm can produce anything resembling apneumotosis, and asthma is well known to produce the reverse condition, namely, emphysema.

3. *Viscid Tenacious Mucus Blocking the Bronchiole Lumen* (Jackson and Lee, Elliott and Dingley, Coryllos and Birnbaum, and many others).—Lee, Ravdin, Tucker and Pendergrass introduced into the bronchus of a dog tenacious mucus removed by the bronchoscope from a patient with apneumotosis. They found that they could produce a typical massive apneumotosis if they inhibited the cough reflex. The dog was narcotized with morphine and anaesthetized with ether; epigastric laparotomy was performed and "Sodium Amytal" injected into the peritoneal cavity. The mucus had a viscosity equivalent to that of a 75% solution of gum acacia; and Band and Hall have successfully repeated the experiment by injecting twenty cubic centimetres of a 75% solution of gum acacia into the bronchus of a dog anaesthetized with "Sodium Amytal" instead of ether.

On the other hand, cases have been investigated by Pasteur, Rose Bradford and other competent observers, in which neither the clinical examination nor the *post mortem* examination lent any support to the mucous plug theory.

If accumulation of secretion alone were the aetiological factor, the excursions of the diaphragm should be resumed after aspiration of the secretion and reinflation of the lung; but this is not the case, for the diaphragmatic immobilization often remains for several days after reinflation.

Again, rapid collapse of a lung produced artificially by suction from its bronchus, has been proved by physiologists to induce reflex spasm of the diaphragm in a persistent inspiratory contraction.

Advocates of the mucous plug theory have to explain, first, why the viscid exudate accumulates in a limited section of the bronchial tree, secondly, why especially after abdominal operations, and thirdly, why the condition is so rarely bilateral.

Whatever may be the essential factor in the production of post-operative apneumotosis, there is remarkable agreement amongst all observers that laparotomies, especially epigastric operations, are the commonest forerunner of this serious complication.

The typical patient is the spare middle-aged man, often with very little costal movement on respiration, who, though in fair general health, is poorly nourished as the result of gastric or duodenal ulceration.

#### Morbid Physiology.

The respiratory centre is located in the *medulla oblongata*, close to the central terminations of the vagus nerve. From this centre fibres descend in the lateral columns of the spinal cord to control the nuclei supplying the various muscles of respiration. After deep ether anaesthesia, and in post-anaesthetic sleep, the respiratory centre is depressed and does not maintain adequate pulmonary ventilation. The respiration becomes shallow and is characterized by a short inspiratory and prolonged expiratory phase. The residual air is gradually absorbed and collapse of the pulmonary alveoli tends to occur.

Inadequate pulmonary ventilation will also lead to increase in the bulk of the bronchial secretion, owing to decreased evaporation and elimination. The secretion therefore gradually increases and collects in the bronchioles and even in the bronchi, and when a point is reached when the tidal air is insufficient to maintain an airway and the cough reflex fails to expel the mucus, the lumen will become completely obstructed.

On account of irritation and respiratory depression, the writer is of the opinion that open ether anaesthesia after preliminary narcotization with "Avertin" is contraindicated for operations on the upper part of the abdomen in men.

When air containing an excess of carbon dioxide is inhaled, the breathing increases first in depth and later in frequency. Furthermore, the amplitude of the respiratory movements is markedly increased, so that the bronchioles tend to become expanded and the alveoli inflated.

Over a quarter of a century ago Sir Arthur Keith demonstrated that the upper lobes of the lungs were distended principally by movement of the upper six ribs, whilst descent of the diaphragm expanded the lower lobes. In other words, inflation of the lower and peripheral alveoli was almost entirely dependent upon the action of this muscle. Conversely, interference with the mobility of the diaphragm, such as caused by manipulation of the abdominal viscera, exposure of the abdominal cavity to atmospheric pressure *et cetera*, would lead to defective expansion of the lungs, particularly at their bases and periphery.

Pasteur was the first to note the frequent occurrence of partial or complete diaphragmatic immobilization, more usually of the right diaphragmatic leaf, as a sequel to laparotomy. Immobilization of this leaf leads to elevation of the liver dulness, whilst relaxation of the left half elevates the apex beat of the heart. These clinical observations may be confirmed by radiography. Normally, on inspiration, the subcostal angle is widened, but with immobilization of the diaphragm widening occurs to an exaggerated extent (Hoover's sign).

Hardy, arguing on Sherrington's law of synergic cooperation, suggests that increased tone of the protective muscles of the anterior abdominal wall is excited by the surgical wound, and therefore the diaphragm, the antagonist, is relaxed. The afferent path of this reflex would appear to be the sensory



fibres of the lower intercostal nerves, and the efferent route, one or both phrenic nerves. There is some evidence to show that each half of the respiratory centre can control the spinal nuclei of both sides.

On the other hand, Pasteur suggested that the vagal afferent fibres were implicated; but experimental stimulation of the central end of the cut vagus does not produce reflex inhibition of the diaphragm.

Complete inhibition of the dome of the diaphragm on one side would allow the abdominal pressure to act directly upon the base of the lung and supply a moderate deflating force.

When the secretion in the finer bronchi accumulates to such an extent that the tidal air is insufficient to maintain an airway, the air in the associated alveoli is gradually absorbed into the pulmonary circulation, and the lobe collapses, drawing the heart towards the shrunken lung. Into this motionless and engorged area bacteria may arrive either from the air or by the blood or lymph.

When the infection is particularly virulent or the patient's resistance low, true bronchopneumonia may develop.

#### The Influence of Sex.

Apneumatoses occurs more frequently in men than women in the proportion of about four to one; hence it is reasonable to infer that the abdominal or diaphragmatic type of respiration of men plays some part in the influence of sex in the incidence of this malady. After recovery from the anaesthetic a man finds difficulty both in coughing and deep breathing, owing to restriction in the diaphragmatic movements and the fact that abdominal respiration gives rise to increased movement and tension in the wound. In women adequate costal breathing does not disturb the abdominal wound to the same extent, and even coughing may often be indulged in without serious pain.

The respiration of patients suffering from emphysema is often carried out solely by the diaphragm; interference with the mobility of this muscle, as in operations on the upper part of the abdomen, may lead to apneumatoses in these patients.

The prevalent practice of fixing dressings by bands of zinc oxide strapping tightly encircling the lower ribs after epigastric operations naturally interferes with the movements of respiration. More than one patient has become blue as a result of this form of mechanical compression.

To sum up, two factors are constantly present in post-operative apneumatoses: first, some interference with respiratory movements, and secondly, obstruction to the bronchial tree, which is followed by absorption by the pulmonary circulation of the air imprisoned in the alveolar spaces distal to the obstruction.

#### PROGNOSIS.

In the majority of recorded cases recovery has occurred spontaneously, the average duration of

illness being about twenty-one days. If the affected part does not expand within thirty-six hours, bronchopneumonia may develop, depending upon the presence or absence of bronchial inflammation and upon the extent and severity of such inflammation. The sputum at first probably consists of mucus expressed from the collapsed lobe, but if expectoration continues longer than thirty-six hours, it becomes thick, green and muco-purulent. Wadsworth has shown that the amount of fibrin in the exudate is proportional to the virulence of the infecting pneumococcus. As the Group IV pneumococcus is of low virulence, the exudate should not be rich in fibrin.

#### TREATMENT.

##### Prophylactic Treatment.

##### Pre-Operative Measures.

Prior to operation the exact position of the heart's apex beat and the upper limit of the liver dulness should be carefully and regularly noted, and the condition of the chest carefully observed for several days after operation.

1. *Oral Hygiene.*—Adequate oral hygiene is necessary before and immediately after operation. Physicians have frequently twitted surgeons on the comparatively small amount of care bestowed by them on the preparation of the patient's mouth before operation, as compared with the infinite precautions taken to defend him from septic invasion in every other direction. As the Group IV pneumococcus is identical with the pneumococcus isolated from the mouth, the frequent use of a mouth wash, consisting of 1 in 500 "Optochin Hydrochloride" (a basic quinine derivative), should prove useful.

2. *Breathing exercises.*—In both splanchnoptotic ("carnivorous" of Treves) and sthenic ("herbivorous") types of individual, the function of respiration falls almost entirely upon the diaphragm, the thoracic muscles doing little, if any, work. If a course of instruction in thoracic breathing be given to such patients by a competent masseuse for a few days prior to operation, a striking improvement in breathing will result.

##### Post-Operative Measures.

As regards the post-operative nursing in abdominal cases, three factors must receive earnest consideration if apneumatoses is to be avoided.

1. *Severe Post-Operative Abdominal Pain.*—Since the introduction of anoci-association by Crile in 1901 it has been possible, by the application of certain drugs, to render the nerve endings supplying the wound anaesthetic and thereby reduce post-operative pain to a minimum. Unfortunately quinine and urea solution, the substance usually recommended, occasionally interferes with healing.

2. *Cough Reflex.*—Chevalier Jackson states that "the cough reflex is the watch-dog of the lungs". Beware lest by the generous pre-operative or post-operative use of opium or its derivatives one abolishes the expulsive cough so essential for clearing the bronchial tree of secretion. Heroine should be

avoided. In the immediate post-operative period a spasm of coughing or the retching of post-anæsthetic sickness leads to the expulsion of retained intra-bronchial secretion and thorough aeration of the bronchial tree.

**3. Free Pulmonary Ventilation.**—The patient is encouraged to make full inspiratory efforts, especially of an abdominal type, for five minutes, every two or three hours. If air containing an excess of carbon dioxide be inhaled, the breathing increases first in depth and later in frequency. 'Five per centum of carbon dioxide in oxygen' ("Carbogen" or "Dicarbox") produces hyperventilation of the lungs, aerating the alveoli and providing them with the necessary amount of gas for the expulsion of any bronchial secretion. An "Austox" or "Comox" tent, placed over the patient's head and shoulders, is connected up with the container by tubing, the flow being regulated at five to six litres per minute. The patient inhales this mixture for three to five minutes. This procedure is repeated every three hours for the first thirty-six or forty-eight hours.

The freedom from pain in the abdominal wound during hyperventilation with the carbon dioxide and oxygen mixture as compared with that which the patient endures in voluntary deep breathing is a marked feature of the administration.

#### Curative Treatment.

The simple expedient of rolling the patient backwards and forwards on his sound side frequently results in his coughing up a mass of thick sputum, reinflation of the lung, and immediate relief (*Saute*).

In cases in which apneumotosis has already developed, carbon dioxide in oxygen (10%) should be administered every one or two hours for three or five minutes at a time, with the addition of continuous oxygen administration if cyanosis be present. To be effective, inhalation should commence as early as possible after the onset; for after the lapse of thirty-six hours the condition is apt to be complicated by the development of bronchopneumonia. Chevalier Jackson recommends bronchoscopic removal of the mucus so that inflation of the collapsed lobe may occur. Bronchoscopic aspiration of the mucus must be reserved, however, for those who are extraordinarily skilled in the technique, and certain of being able to avoid additional irritation to the bronchial mucosa.

#### BRONCHOPNEUMONIA.

Bronchopneumonia is essentially an inflammation of the terminal bronchus and air vesicles which make up a pulmonary lobule. The inflammatory process spreads down from the larger bronchi, in which the disease commences, to the bronchioles. The bronchiolitis in turn gives rise to inflammation of the alveoli, which results in proliferation and desquamation of the epithelial cells lining its walls.

For many years pulmonary complications following operations under general anæsthesia were attributed to the anæsthetic agent; but the modern

view is that relatively pure ether, administered with reasonable care, is not an important cause of pneumonia. Holscher, in his classical paper, states that he found in animals that pulmonary inflammation did not arise after ether narcosis, even when infectious material was placed in the mouth, provided care was taken to promote the escape of mucus and saliva by maintaining an appropriate position of the head.

Deep narcosis should not be attained with concentrated vapour; free respiration and uniform inhalations of a vapour of regular strength rapidly lead to perfect surgical anæsthesia with effortless respiration and little or no irritation of the lung tissue.

Now in many patients the inhalation of ether vapour of undue concentration (that is, over 20%) induces free salivation and the secretion of profuse watery discharge from the nose, mouth and pharynx. This secretion is usually accompanied by profuse sweating, and many authorities claim that the harmful effects of ether arise first from the aspiration into the lungs of microorganisms contained in the secretion, and secondly, through the loss of heat to the body occasioned by the evaporation of sweat.

During anæsthesia, when the intratracheal catheter is being inserted by direct laryngoscopy, mucus has been noted by several observers to be aspirated into the larynx. If this mucus be heavily infected with pathogenic organisms, lung trouble would be expected to occur. The practice, now almost universal, of administering a hypodermic injection of atropine prior to operation has prevented the secretion to a large extent.

Vierordt states that normal lungs lose eleven calories, whereas the skin loses ninety calories of heat per hour. Robb made a series of observations on the reduction in patients' temperatures during operations (a) on a cold table and (b) on a table heated by means of electric lamps placed underneath. His results were as follows: In thirty-eight abdominal sections on a cold table, in a room at a temperature of 28.3° C. (83° F.), the total fall of temperature was 14.3° C. (25.8° F.); in thirty-eight abdominal sections on a heated table, in a room at a temperature of 25.5° C. (78° F.), the total fall was only 5.9° C. (10.6° F.). Thus in the second series, though the room was at a lower temperature, the heated table considerably reduced the cooling of the body. Corlette has pointed out that the loss of heat by convection from the body depends on the free movement of air over the skin.

Closely allied to this variety of post-operative pneumonia is aspiration pneumonia, in which, during operations under anæsthesia upon the air passages, matter containing organisms enters healthy bronchi and sets up an intense bronchopneumonia, so severe that suppuration or gangrene may follow.

#### SYMPTOMS.

On the first to third day after operation the patient develops fever, with cough, rapid pulse rate

and rapid breathing. The colour becomes pale and slightly cyanotic, and there is a moderate rise of temperature which, however, may be absent in feeble or old people.

The pulse rate is increased, but not in proportion to the respiration rate.

The cough is frequent, and is very soon accompanied by the expectoration of discrete, greenish yellow, purulent masses surrounded by mucus and at times streaked with blood. The sputum is viscid, difficult to expel and seldom rusty.

#### SIGNS.

On inspection of the chest, the thoracic movements are observed to be shallow and frequent, and it is mainly with the comparatively unaffected front and upper portions of the lungs that the patient breathes.

Fine bubbling râles are audible over both pulmonary bases behind, and to a much less extent, or not at all, over the upper and anterior portions of the chest, where, however, sibilant and sonorous rhonchi may prevail.

In the initial stages the resonance to percussion is everywhere unimpaired; but subsequently the lungs give evidence of patches of consolidation or, at least, of areas of collapse, and only too frequently death ensues on the fourth, fifth or sixth day after operation. Many of these cases are mistaken for lobar pneumonia.

#### TREATMENT.

The treatment is symptomatic and does not vary from that usually employed in the medical wards, such as the application of poultices to the chest wall, the use of medical diathermy, expectorant mixtures, steam tents, various antisera and vaccines.

It has been discovered that certain derivatives of quinine, such as "Optochin", exert definite bactericidal action towards all types of pneumococci. "Optochin" therefore has recently acquired popularity in the treatment of pulmonary conditions. Although "Optochin" (ethyl-hydrocupreine) has a well marked beneficial action on mice infected with pneumococci, and prior injection protects these animals from infection, it does not appear to have any such remedial action in pneumonia in man (Morgenroth). Furthermore, the prognosis is not improved, and temporary blindness may result from its use.

Non-specific shock or activating therapy has been recommended, but is of doubtful utility.

Rausche has reported good results from the intramuscular injection of ten cubic centimetres of the patient's own blood (autohæmotherapy).

When the signs in the lungs are widespread and accompanied by dyspnoea and cyanosis, oxygen should be administered continuously at a rate of flow varying between two and three litres per minute, so as to counteract anoxæmia; this should be alternated with the administration of carbon dioxide in oxygen to initiate deeper respiratory movements calculated to inflate any collapsed areas.

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#### THE TREATMENT OF BLINDNESS ASSOCIATED WITH RETINITIS PIGMENTOSA.

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THE treatment of the blindness associated with *retinitis pigmentosa* by the new method herein described has already been discussed in a preliminary note published in this journal.<sup>(1)</sup>

There is associated with the disease known as *retinitis pigmentosa* a thread-like constriction of the retinal vessels. It has been suggested by Malcolm Hepburn<sup>(2)</sup> that this vaso-constriction and consequent diminution of blood supply are responsible



for the changes in the retinal cells which lead to contraction of the fields of vision and loss of acuity of vision. This suggested possible cause of the disease was brought to my notice by Dr. Arthur Lawrence, ophthalmic surgeon, of Melbourne.

Since the retinal blood vessels, in common with all other blood vessels, are constricted by the action of the sympathetic nervous system, division of these nerves would lead to loss of power of constriction of the arterioles and venules and thus alter one of the outstanding features in the pathological changes associated with this disease. In my judgement the idea was worth a trial, and I put it before Dr. E. A. Brearley, Honorary Ophthalmic Surgeon to the Royal Prince Alfred Hospital and Lewisham Hospital. He agreed with me and suggested to one of his patients suffering from an advanced stage of this disease that he should undergo operation. The following is Dr. Brearley's note concerning the patient.

This patient, a shearer, had found it impossible to carry on his occupation and had applied to be admitted to the Industrial Institution for the Blind. An operation was performed on the right side in June, and before the end of the year he went away shearing and has been able to carry on since. Details of his case will be given later.

After pointing out the possible and probable effects of treatment in regard to changes in the face, eye and brain, I carry out the following operative treatment.

#### OPERATION.

The incision is made across the insertion of the sterno-mastoid muscle in a slightly upward and lateral direction for about five centimetres. The platysma is split longitudinally. The external jugular vein may usually be avoided, but if it crosses the wound, it should be divided and ligated. A dissection through the cervical fascia displays the sterno-mastoid muscle, and on a slightly deeper plane is seen the omo-hyoid muscle. Both these muscles are retracted medially, though occasionally it is necessary to retract the omo-hyoid laterally. The deep layer of the cervical fascia must then be opened to display the nerve roots of the brachial plexus and the *scalenus anterior* muscle. This muscle is then evulsed piecemeal with the strabismus hook. The phrenic nerve should be avoided as it passes from above downwards and inwards on the anterior surface of the *scalenus anterior*. After the *scalenus anterior* has been evulsed, Sibson's fascia comes into view. This must be broken through with the point of the finger or with a dissector to display the parietal layer of the pleura covering the apex of the lung. The thoracic sympathetic trunk must be sought on the medial and posterior wall of the space thus exposed. The subclavian artery is drawn downwards and the sympathetic trunk may be found by displaying the vertebral artery. The sympathetic trunk lies immediately posterior to, though sometimes it is placed laterally to, this vessel. Dissection with a small swab of gauze on a pair of forceps along the postero-medial side of the space will reveal the trunk as it crosses the space between the

first and second ribs. In this situation it is usually about four to five millimetres broad. The trunk is then lifted with a blunt strabismus hook and may be torn through with a sharp hook just below the first thoracic ganglion. If it is desirable to take out the whole of the sympathetic supply to the brain, the branches of the first thoracic ganglion are divided and the ganglion removed; it is probably better to do so in patients suffering from this disease. This is easily done if the trunk on the strabismus hook is followed upwards. This confers upon the patient a Horner's syndrome. The occasional ramus from the second thoracic ganglion to the first thoracic nerve may be seen crossing the first intercostal space. In most instances the operation was performed on one side only.

#### RESULTS OF TREATMENT.

##### Physiological Results.

1. *Depression of Tone.*—Depression of tone in the ipsilateral facial musculature is shown by partial collapse of the angle of the mouth and of the nostril of the same side.

2. *Immediate Contraction of the Pupil.*—The contraction of the pupil is never of the pin-point variety. Even after excision of the superior thoracic ganglion the pupil has an aperture of about three millimetres. When the trunk has been divided below the superior thoracic ganglion, as it was in most of these cases, the aperture of the pupil may be 3.5 millimetres or even 4.0 in subdued light.

3. *Dilatation of the Retinal Vessels.*—If evidence was required of the control of the retinal circulation by the sympathetic nervous system, it was provided by this operation. Dr. Brearley found that the ipsilateral retinal vessels were almost invariably dilated after operation. This dilatation occurs in the arterioles and venules, and is permanent. The capillaries are too small to be seen with an ordinary ophthalmoscope.

4. *Enophthalmos.*—In many instances enophthalmos appeared.

5. *Ptosis.*—Ptosis of the upper lid appeared, but was not by any means permanent. After about fourteen days it was barely noticeable in most of the patients.

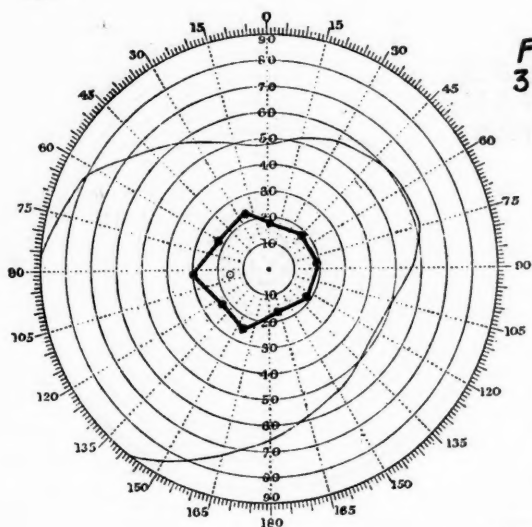
##### Clinical Changes.

The following are the histories of the patients' treatment and the changes that occurred in the condition of their eyes.

#### Clinical Notes on Fourteen Cases of Retinitis Pigmentosa. (By Dr. E. A. Brierley.)

In all patients acuity of vision was tested, with full correction in a dark room, with Snellen's type, illuminated by uniform artificial light. The fields of vision were taken under similar conditions with a McHardy perimeter. The moving object was white, ten millimetres square, and illuminated by artificial light of constant candle-power. After operation the ipsilateral pupil was contracted, and in the majority of patients the vessels of the fundus on the same side were enlarged. Of the fourteen patients, nine,

LEFT.

F.M.  
3-12-30.

RIGHT.

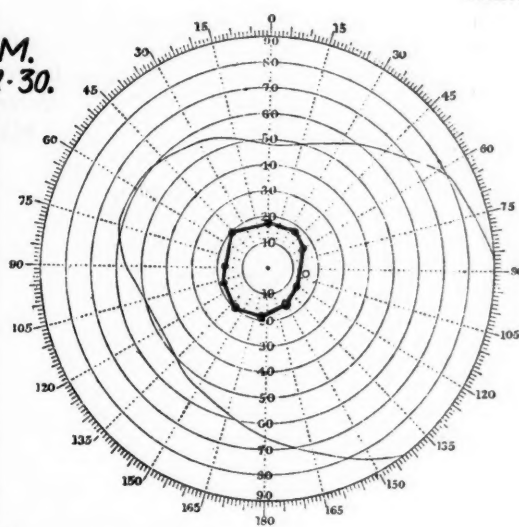


FIGURE I.

The chart of the visual fields of patient F.M. after operation.

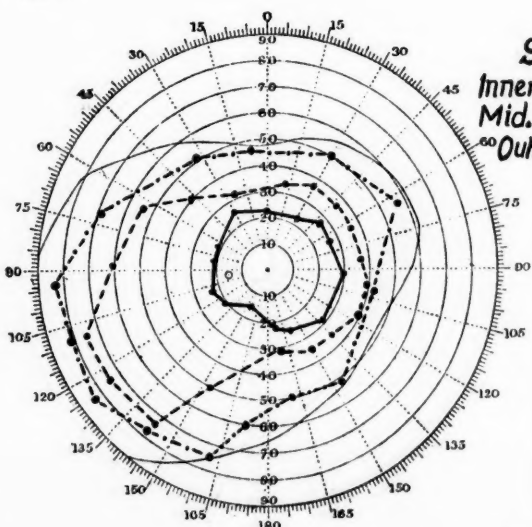
who came from the Blind Institution, had lost their central fixation for periods varying up to a number of years, and in none of these was any permanent improvement obtained. Of the remaining five patients, taken at an earlier stage, four have maintained improvement and one has lost ground after immediate response. Details of these five patients in order of operation follow.

CASE I: F.M., aged forty-three years, on May 16, 1930, had right and left vision of less than  $\frac{1}{60}$ ; the visual fields were unchartable; central lens opacities were present. On June 30, 1930, after operation on the right side, right and left vision was  $\frac{1}{60}$ . On July 14, 1930, the right vision was  $\frac{1}{60}$ , left  $\frac{1}{24}$ ; the fields were between  $10^\circ$  and  $20^\circ$  circles. On December 2, 1930, the right vision was  $\frac{1}{60}$ .

left  $\frac{1}{24}$ ; the fields were as before. He had been away shearing. An optical iridectomy was later performed on the right side on account of central lens opacities. Severe hemorrhage occurred with subsequent staining of the cornea and lens capsule. On December 8, 1931, when last seen, his left vision was  $\frac{1}{24}$  and the field was as before.

CASE II: S.K., a deaf mute, aged eighteen years, when seen on July 6, 1930, had right and left vision of  $\frac{1}{60}$ . The visual fields were between  $20^\circ$  and  $30^\circ$  circles. On July 17, 1930, the right and left vision was  $\frac{1}{60}$ , and both fields were reduced. On July 25, 1930, after operation on the right side, the fields were doubled in area. On January 22, 1931, the right and left vision was  $\frac{1}{60}$ , and the fields were further enlarged. On December 14, 1931, after operation on the left side, the right and left vision was  $\frac{1}{60}$ ; the fields were almost normal. This patient regained his hearing.

LEFT.

S.K.  
Inner 16-7-30.  
Mid. 25-7-30.  
Out. 14-12-31.

RIGHT.

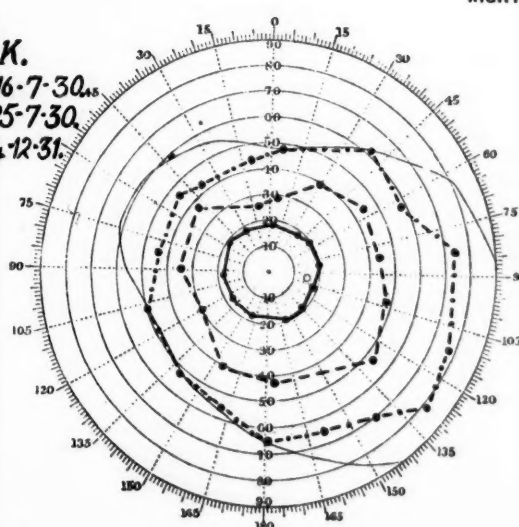


FIGURE II.

Chart showing the extent of the visual fields of patient S.K. after operation.

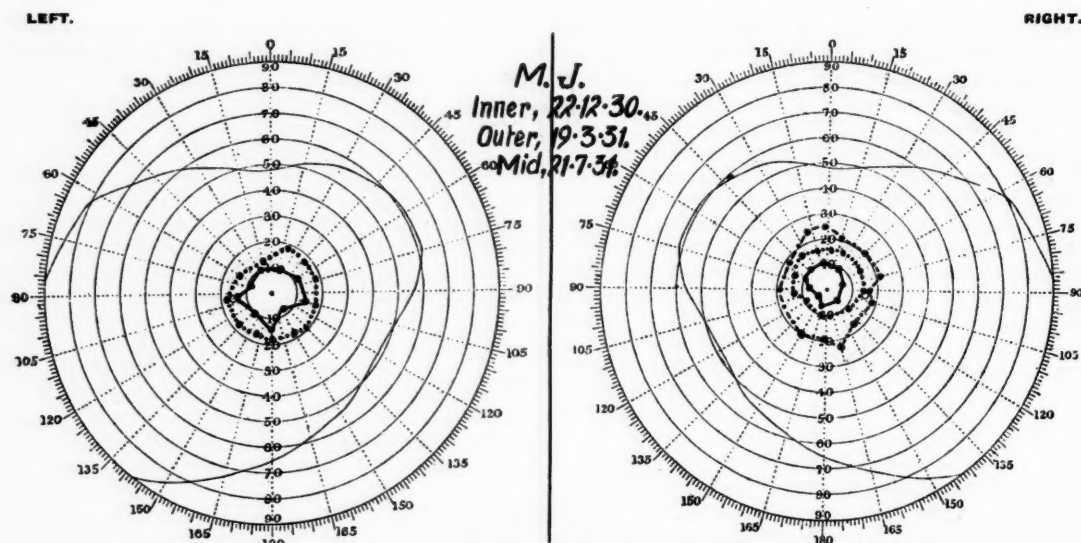


FIGURE III.  
Chart showing the extent of the visual fields of patient M.J. before and after operation.

CASE III: M.J., a male, aged fifty-six years, on December 22, 1930, had right vision of less than  $\frac{1}{60}$ ; the field was inside the  $10^\circ$  circle. The left vision was  $\frac{1}{15}$ , the field just outside the  $10^\circ$  circle. On March 19, 1931, the right vision measured  $\frac{1}{30}$ , left  $\frac{1}{12}$ . Both fields were enlarged. On July 21, 1931, when last seen, the right vision had relapsed to less than  $\frac{1}{60}$ ; the field was reduced; the left vision had relapsed to  $\frac{1}{15}$ ; the field was still enlarged.

CASE IV: A.B., aged fifty years, had right and left vision of less than  $\frac{1}{60}$ . The visual fields could not be charted. The left eye was divergent. On March 18, 1931, after operation on the right side, there was no apparent improvement. On June 16, 1931, the vision of the right eye was  $\frac{1}{36}$  (one letter). On June 25, 1931, the vision of the right eye was  $\frac{1}{24}$  (two letters); the right visual field was limited at  $10^\circ$  on the chart. On February 4, 1932, when the patient was last seen, the improvement had been maintained. There was no improvement in the left eye; operation had been performed on the right side only.

CASE V: S.S., a male, aged sixty-two years, when seen on April 21, 1931, had right and left vision less than  $\frac{1}{60}$ ; the fields were down to fixation point. On May 8, 1931, after operation on the right side, the right vision was  $\frac{1}{60}$ . On May 18, 1931, the right vision was  $\frac{1}{30}$ , left  $\frac{1}{60}$ ; both fields were enlarged to between  $10^\circ$  and  $20^\circ$  circles. The patient has not been seen since, as he returned to Brisbane.

*Clinical Notes of One Case of Retinitis Pigmentosa.*  
(By Dr. George Thomson.)

CASE VI: M.R., a female patient, aged thirty-five years, was seen in July, 1929, when she complained of loss of vision and night blindness. Her vision, with correction, was  $\frac{1}{30}$ , left, and  $\frac{1}{20}$ , right. The field of vision in each eye was contracted uniformly to  $20^\circ$  round the fixation point. The fundus presented the typical appearance of *retinitis pigmentosa*. In October, 1930, the fields had contracted to  $15^\circ$ , and in May, 1931, to  $10^\circ$ , the vision in each eye remaining at  $\frac{1}{24}$ .

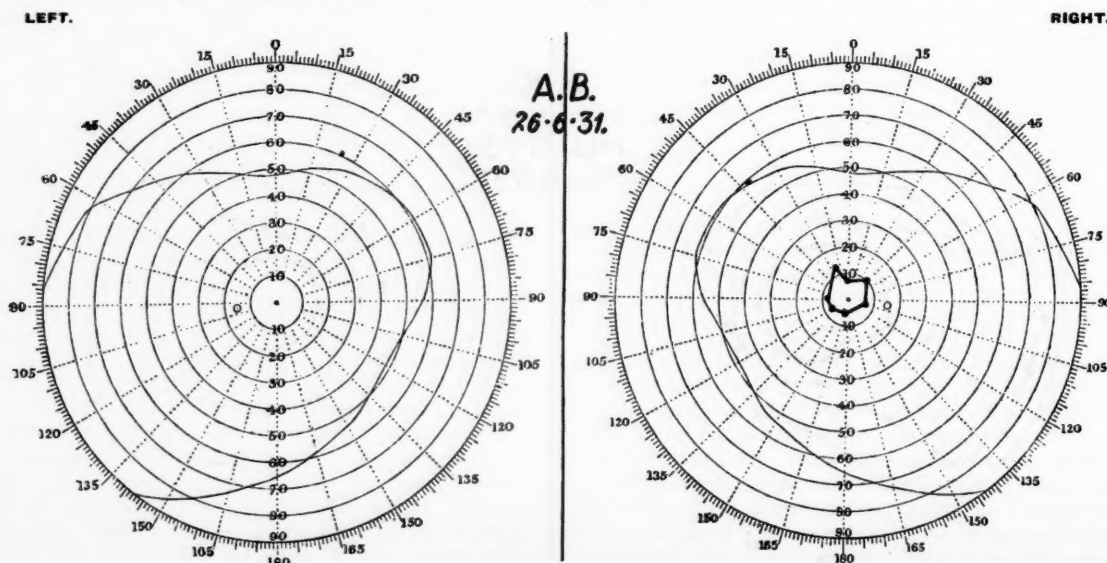
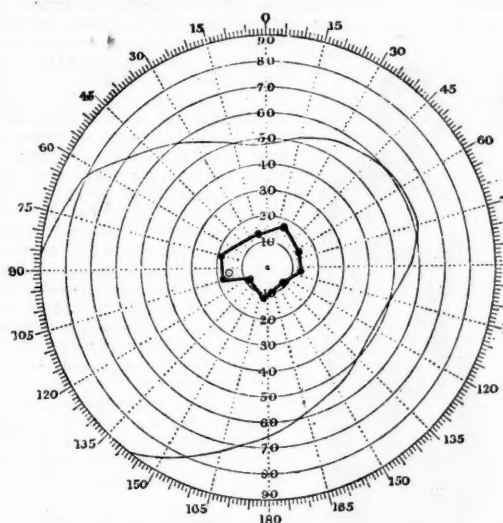


FIGURE IV.  
Chart showing the extent of the visual fields of patient A.B. after operation.



LEFT.

S.S.  
18-5-31.

RIGHT.

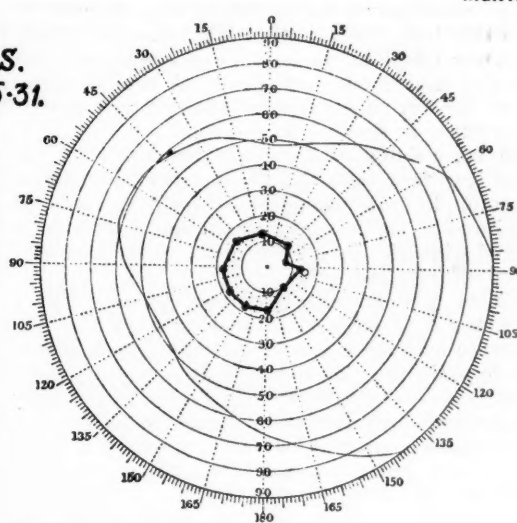


FIGURE V.

Chart showing the extent of the visual fields of patient S.S. after operation.

On May 26, 1931, the right thoracic sympathetic trunk and four ascending rami which appeared to run with the vertebral artery, were ablated; but a definite large ganglion was not found.

On June 8, 1931, the vision, with correction, was  $\frac{5}{60}$  right, and  $\frac{5}{20}$  left. The right field was limited at  $15^\circ$  from the fixation point, and the left,  $10^\circ$ . On June 22, 1931, the field of vision of the right eye had extended to  $20^\circ$  from the fixation point.

On August 17, 1931, a large ganglion, which could be distinctly felt and seen in the region of the left inferior cervical ganglion, was freed at operation by Dr. A. V. Meehan.

On September 7, 1931, the vision of the left eye, with correction, was  $\frac{5}{60}$ , and the field was limited at  $15^\circ$ . On March 14, 1932, the vision, with correction, was  $\frac{5}{60}$ , right,  $\frac{5}{60}$ , left. The visual fields are as represented in the diagram (Figure VI).

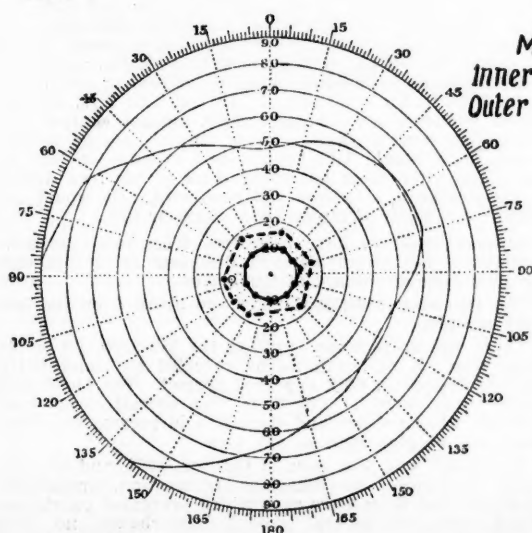
The patient volunteers the information that she can now get about alone in the evening, although she is not too confident, save on moonlit evenings, when she feels quite confident. She also states that she is not getting the many bruises she used to get from corners of pieces of furniture *et cetera*. The latter information shows the value of even a small increase in the field of vision, although in this case the increase, though small, is relatively a large one.

There is no change in the fundus picture, excepting a very slight increase in the calibre of the arteries.

#### Other Clinical Changes.

One of the most remarkable collateral effects was the recovery of hearing in a congenital deaf mute (S.K.), aged eighteen years. The results were contralateral, that is, the operation on the right side led to a recovery of hearing on the left side, so that the

LEFT.

M.R.  
Inner  
Outer  
12-5-31.  
14-3-32.

RIGHT.

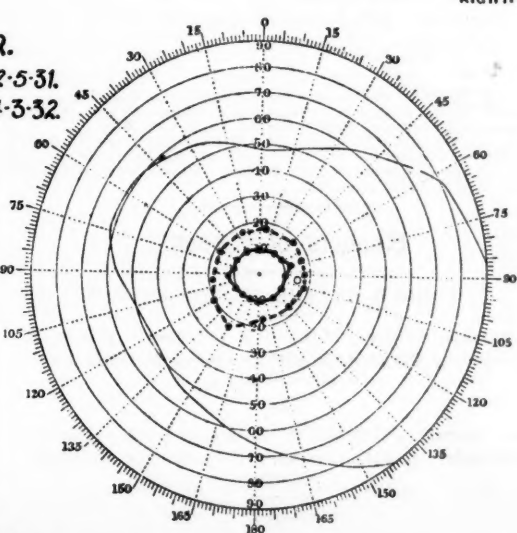


FIGURE VI.

Chart showing the extent of the visual fields of patient M.R. before and after operation.

patient could hear a watch ticking at a distance of two inches from his ear. He could hear band music and motor traffic in the roads, and could hear, but could not interpret human speech. A similar operation on the left side one year later led to a similar improvement in hearing on the right side.

The contralateral effects are explained by the anatomical fact that the fibres from the cochlea terminate in the temporal convolution of the opposite side, so that hearing on the right side is restored when the circulation of the brain is altered on the left, and *vice versa*.

Another patient with acquired deafness had a contralateral restoration of hearing also.

Chronic headaches almost invariably disappeared in these patients after operation. One patient (S.S.) wrote as follows: "Firstly my eyes are decidedly stronger and don't tire as they used to do, and my headaches have entirely banished, which is a blessing." I have had many similar verbal reports after unilateral operation.

In another instance vertigo, with which the patient had been afflicted for some years, disappeared.

In most patients the operation was performed on one side only, and the effect on the contralateral eye when present is explained as follows. Acceleration of cerebral circulation which follows a sympathectomy on the side of operation, has the effect of hastening the flow of blood in the central longitudinal veins and sinuses. This means easier egress for the blood of the opposite side, and so the contralateral circulation is accelerated also.

#### CONCLUSIONS.

1. Thoracic sympathetic trunk section affords relief in the treatment of blindness associated with *retinitis pigmentosa*.

2. The relief is more marked in younger patients and in those in whom the disease has not been present for a long period.

3. Complete blindness of long standing is a contraindication to operation.

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## Reports of Cases.

### A TUMOUR OF THE HYPOTHALAMUS.

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#### History.

I.N. was a boy, aged eight years, who had the sexual development of a young man of eighteen years of age,

as shown by the accompanying photograph (Figure 1). According to his mother, his external genitals were already



FIGURE 1.  
 Showing the external appearances of the patient.

large when he was born prematurely at eight months, and thereafter developed rapidly. Hair appeared on the pubes when the age was three and a half years, in the axilla when he was four, and on the upper lip when he was six years old. His thighs and legs were always sinewy and firm, not fat nor baby-like. His voice became deep-toned at the age of six years, and about this time he became conscious of his peculiarity, though not realizing its sexual significance. Emissions seemed to have occurred during the fits from which he suffered, but as far as known, not at other times. His inclinations were not sexual. He avoided girls and women, did not like playing with children; he sought men and imitated them in dress and manner.

He was the second child in a family of three. The other two are aged ten and five years respectively. The elder was also an eight months child. Both are healthy. The father and mother are healthy, but the father is apt to be sulky at times.

I.N. was a breast-fed baby and thrived physically, but was mentally backward. He crawled till he was two years old, could not form sentences till the age of three years, and continued to use baby talk till his death at eight years. At school he appeared natural, but as his presence was objected to an account of his fits, his schooling was of brief duration. At home he was apt to be talkative and boastful, but he was truthful, generally obedient, and affectionate to his mother; and although he would scream at other children, he was not spiteful and did not hit or bite them. He became subject, however, to marked aberrations of temper. These began with seizures at the age of four years, and became progressively worse as time went on. At first he would "grab a chair and turn his head and eyes to the right", but did not lose consciousness. He used to say "something went bang" in his head. Later he would "twitch and stiffen his body". At the age of six years he developed violent outbursts of temper and began to "behave like a wild animal", to kick and bite, scream, smash windows and furniture, fight against control, and finally lose consciousness. These "turns", as the mother called them, would last from a few minutes to half an hour, and after them he would come of his own accord to his mother to be kissed and comforted. He would fall asleep very easily if placed on a couch or bed.

Although said to have been free from most infantile complaints, he had an offensive discharge from both ears for some time at the age of four years.

The following additional notes are taken from the hospital records.

There was no reaction to either the Wassermann or the Kahn test. X ray examination revealed no abnormality. The cerebro-spinal fluid appeared normal. The blood urea content was normal. The urine was normal except near the end, when acetone and diacetic acid became manifest; there was no glycosuria at any time.

This child was first seen in October, 1927, and his condition interpreted as endocrine dysfunction, presumably pituitary; but there were gaps which prevented conviction. There were no general growth disturbance, no acromegalic features, no modifications of carbohydrate, fat, or water metabolism, no evidence of intrasellar or suprasellar

tumour. The idea of a pineal tumour as the cause of the macrogenitosomia was discounted by the absence of intracranial pressure (no hydrocephalus); lack of visual symptoms ruled out chiasmal glioma. There was, indeed, no definite indication of any cerebral tumour. All that appeared was the suggestion of hyperfunction of the basophile cells without involvement of the other elements of the anterior pituitary lobe and without malformation of the gland. But certitude was wanting; the same symptomatology has been associated with hyperplasia of the adrenal cortex without pituitary lesion. Consequently no operative nor other remedial measure offered promise of benefit, and the child was discharged from hospital to attend as an out-patient, which he did at intervals during the next two years.

On November 17, 1931, some two years after his first visit, he was again brought into hospital, having had six to twelve fits daily for a week, and having been unconscious for two days. He died next day.

#### The Post Mortem Findings.

The essential *post mortem* finding was a tumour about the size and shape of a walnut, occupying centrally the floor of the third ventricle (Figures II and III). It projected freely into the ventricle without causing obstruction,

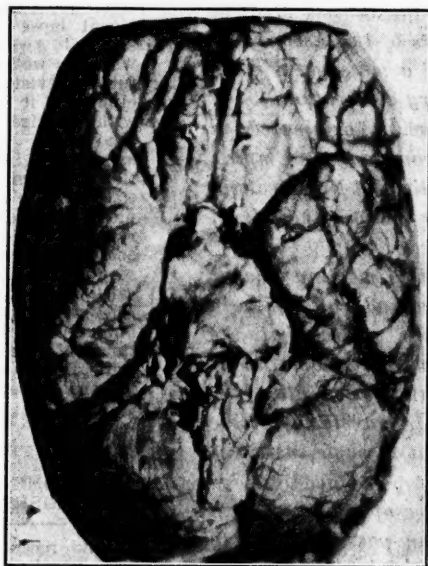


FIGURE II.

The base of the brain, showing the site of the tumour.

and, at its anterior end merged with the infundibulum, again without obstruction. The chiasma was clear, and on each side the optic tracts, traceable for a short distance, were lost in the posterior part of the growth. The *tuber cinereum* and the mamillary bodies were obliterated. The tumour sat on the basisphenoid, whose clinoid processes, especially the right, were flattened and deformed. At its posterior end the tumour passed below the crura and pons, leaving these parts and the cerebellum unaffected, and the third and fourth ventricle patent and of their usual calibre. The tumour had developed so gently as to cause no serious disturbance of the surrounding parts.

The growth was a firm, white, rather fibrous body, histologically an astrocytoma; it contained no cysts.

The pituitary gland was of normal size, no larger than a small pea; it was situated comfortably in its fossa, which was undisturbed. Histologically the gland was normal; there was no excess of basophile cells in the *pars anterior*, and there was no abnormality of the *intermedia* nor the

*pars posterior*. Colloid could be seen in the cleft. The pineal gland was normal macroscopically and microscopically, as were also the other endocrine glands examined: the thymus, the thyroid and the adrenals. The gonadal organs were not preserved for microscopical examination, but appeared normal at the autopsy.



FIGURE III.

Hemisection of the brain and tumour, showing the intact pituitary fossa (marked with ring).

#### Discussion.

The sexual and temperamental anomalies in this child appear to have been produced by a hypothalamic tumour without involvement of the pituitary or any endocrine gland. It would seem further that only some of the diencephalic nuclei were involved, since the symptomatology was incomplete; part of the system worked normally. No further elucidation of the point was accomplished. The existence of so large a mass without the usual signs of cerebral tumour is perhaps explained by the character of the tumour (astrocytoma is slow-growing, with cells of mature type, hyperplastic rather than malignant in nature) and by the fact that it could spread itself in the natural space of the third ventricle without invasion of adjacent parts or obstruction of the circulation of the cerebro-spinal fluid.

Recent experimental work has been much concerned with the relative rôles of the pituitary and the hypothalamus in certain fundamental vegetative functions, such as growth, sexual development, hunger, thirst, sleep *et cetera*. Sexual atrophy seems to be a usual result of destructive lesions of both structures. In the case reported there were sexual hypertrophy and also hyperfunction, or at least activity, at an unduly early age, if the emissions noted were really seminal. So it is to be inferred that the lesion was "irritative" and not destructive. However this may be, the case affords what appears to be clinical evidence that the ancient diencephalon retains, or may retain, some governance over those animal manifestations that it controls in lower types of life that do not possess cerebral hemispheres. Incidentally it also affords some chastening instruction in the matter of diagnosis.

#### Acknowledgements.

We have to thank several of our colleagues for clinical interest and help, and Dr. Oliver Latham for confirming the histological observations on the tumour.

#### Reviews.

##### KIDNEY DISEASE.

Most text book accounts of renal disease are written either from the medical point of view, with scant reference to surgical disorders, or are found in works on urology in which the medical aspect receives equally inadequate recognition. "Diseases of the Kidney", by



W. Girling Ball and Geoffrey Evans, strikes an original and welcome note in that it is written by a surgeon and a physician in collaboration.<sup>1</sup>

The introductory chapters, comprising about a third of the book, are devoted to subjects of common interest: the embryology, anatomy and physiology of the kidney, a review of the signs and symptoms of medical and surgical renal disease, and the examination (clinical, laboratory and instrumental) of a patient with a renal disorder. The scientific side, though suffering to some extent on account of the necessary condensation, is very well summarized, and the authors, when discussing a controversial subject, very wisely content themselves with a presentation of the current view, giving the arguments for and against. A rather surprising omission is a consideration of the vascular and glandular anatomy of the kidney. On the clinical side, this section contains a wealth of thoroughly practical and admirably presented information, which could hardly be more complete.

The remainder of the book is devoted to a systematic account of the various affections of the upper part of the urinary tract. In each instance the aetiology, pathology, symptomatology, course, diagnosis, treatment and results are fully but concisely discussed. The chapter on Bright's disease is excellent. Like the rest of the book, it is essentially practical, and also appeals very strongly on account of the simplicity of the classification given.

The latter chapters of the book, on surgical affections, rather fall short of the previous standard, and seem to show evidence of hurried preparation. For instance, the authors state (page 330): "Death from the operation (removal of a tuberculous kidney) is usually due to uræmia as the result of involvement of the opposite kidney"; and again (page 369): "The most striking sign of oxaluria is a painless hæmaturia . . . The urinary tract

should always be X-rayed to exclude a calculus." In pre-cystoscopic days such statements might have been in order. Occasionally an actual misstatement appears: "Bullos oedema (of the bladder wall) is almost pathognomonic of tuberculous infection" (page 321), and "Single calculi are invariably found in the pelvis" (page 342). In the concluding chapter, on operations on the kidney, the authors recommend, when extending a pyelotomy incision into the

cortex, ligation of the posterior branch of the renal artery. This would certainly stop any bleeding. Though the retro-pelvic artery must be meant, this statement should never have been allowed to appear.

Considering the size of the book, the authors have for the most part attained a very fair measure of success in an ambitious task. Apart from the occasional lapse in the surgical section, which, we trust, future revision will eliminate, it is filled with concise, practical and simply expressed information, written essentially for the general practitioner and the man who does an occasional cystoscopy, to whom we can recommend it. The paper and the numerous illustrations of specimens, radiograms and pyelograms, are alike excellent.

#### ABDOMINAL CRISES.

THE recent visit to Australia of Mr. C. H. Fagge and his lectures in several of the capital cities will bring added interest to a small book published by him as one of the pocket monographs on practical medicine. He has called this book "The Acute Abdomen".<sup>2</sup> We object to this term, but it has unfortunately gained such popularity that even so eminent an authority as Mr. Fagge accepts and uses it. This little book is an excellent practical discourse on the inflammatory and other acute conditions occurring in the abdomen. Medical practitioners will profit by reading it.

<sup>1</sup>"Diseases of the Kidney", by W. G. Ball, F.R.C.S., and G. Evans, M.D., F.R.C.P.; 1932. London: J. and A. Churchill. Royal 8vo., pp. 432, with eight coloured plates and 159 text figures. Price: 36s. net.

<sup>2</sup>"Pocket Monographs on Practical Medicine: The Acute Abdomen," by C. H. Fagge, M.S., F.R.C.S.; 1932. London: John Bale, Sons and Danielsson, Limited. Foolscap 8vo., pp. 92. Price: 2s. 6d.

### MESSAGE FROM THE PRESIDENT OF THE BRITISH MEDICAL ASSOCIATION TO THE MEMBERS OF THE AUSTRALIAN BRANCHES.

THE following message to the members of the Australian Branches has been received from Lord Dawson of Penn, President of the British Medical Association.

*Permit me as President-Elect of the British Medical Association to convey to the members of the Association in Australasia through your journal a message of goodwill on the occasion of our Centenary celebration.*

*The work of the Association which originated in England has spread progressively throughout the Empire, and for more than fifty years Australia and New Zealand have played a great and increasing part in the life of the Association.*

*We are therefore looking forward to meeting a large number of Australian and New Zealand colleagues in London this coming July. We are aware that the financial depression rests heavily on Australasia, as it does upon the Mother Country, and we realize the difficulties which will beset members in travelling outside their own countries, and we fear that in some instances these difficulties will be insuperable.*

*We shall hope to have the pleasure of giving a warm welcome to as many members as can possibly come to this great reunion in London.*

*The meeting will be important to the cause of knowledge. It will make for deeper understanding and friendship. It will bear witness to our common ideals and loyalties in the furtherance of which the great professions play an ever-increasing part.*

DAWSON OF PENN.

May 20, 1932.

## The Medical Journal of Australia

SATURDAY, JULY 23, 1932.

*All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.*

*References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.*

*Authors who are not accustomed to preparing drawings or photographic prints for reproduction, are invited to seek the advice of the Editor.*

### THE CENTENARY.

ON July 19, 1832, a meeting of medical practitioners was held at Worcester General Infirmary for the purpose of discussing certain reforms in matters pertaining to medical practice, the status of medical practitioners and their relation one to another. To the vision of Charles Hastings the holding of this meeting was due; he showed the way to his brother practitioners, and the British Medical Association came into being. Now, one hundred years later, members of this world-wide organization are gathered at London to do honour to the memory of Charles Hastings and to celebrate the hundredth birthday of the association that he founded.

The programme for the centenary meeting has been planned on lines similar to those usually adopted at annual meetings; in other words, members will meet in sections devoted to the study of special branches of medical science. There will be special social and commemorative gatherings, and among these will be a pilgrimage to Worcester for the purpose of unveiling a window in Worcester Cathedral to the memory of Charles Hastings, and a plaque on the house where he lived. At this function special positions will be allotted to delegates from the Federal Committee (Australia), the

South African Medical Association, the Canadian Medical Association and overseas branches. The Australian Branches have been honoured by the appointment of some of the members as vice-presidents of sections. The following names appear on the official list: Sir Richard R. Stawell (Medicine), Sir Henry Newland (Surgery), Dr. N. D. Royle (Physical Medicine), Dr. J. H. L. Cumpston (Public Health), Dr. R. Graham Brown (Otolaryngology), Dr. H. M. Hewlett (Radiology), Dr. A. W. Campbell (Neurology), Dr. H. Douglas Stephens (Diseases of Children), Professor W. A. Osborne (Physiology and Biochemistry), Dr. D. D. Paton (Ophthalmology), Dr. R. B. Wade (Orthopaedics), Dr. E. H. Molesworth (Dermatology and Venereal Diseases), Dr. Gilbert Brown (Anaesthetics), Dr. A. Breinl (Tropical Medicine), Dr. W. E. Jones (Mental Disorder), Dr. Sinclair Gillies (Tuberculosis), Dr. L. Cowlshaw (History of Medicine), Dr. A. A. Palmer (Forensic Medicine).

The prominence given to the scientific work of the sections should impress on the non-medical mind, first of all the main object of the British Medical Association, the pursuit of knowledge, and secondly, that there can be no standing still in the search for truth—that, though at a centenary gathering the past may be viewed with thankfulness and possibly with pride, though there may be time for eating and drinking and making merry, there can be no rest until truth has been revealed and man has appeased his hunger with the fruit of the "tree of the knowledge of good and evil". The members of the British Medical Association will find it possible to use this meeting in several ways. As Lord Dawson writes in his message to the Australian Branches, published in this issue, it will make for deeper understanding and friendship. From this point of view it is to be regretted that a larger number of Australian practitioners did not find it possible to make the journey to London. Australia will be represented by the Chairman and Vice-Chairman of the Federal Committee, Sir Henry Newland and Dr. J. Newman Morris, by several Vice-Presidents of Sections, by official delegates from the Branches and by others. Had a larger delegation gone from the Commonwealth, Australian practitioners would have been more likely to realize that they belong to

a world-wide organization, that as members of one family they are heirs of a common heritage and must strive together for the attainment of a common objective. Although members gathered in London congratulate themselves on the growth of the Association, although they use the meeting as Lord Dawson suggests, as they listen to the scientific discussions they will surely realize, as all others who consider the matter must realize, that comparatively little knowledge has been gained in proportion to the time, the money and the lives that have been given to medical research. The energy expended to discover one germ of truth in the chaff of irrelevance is enormous. Medical practitioners have little cause for vainglory in this regard. Since there can be no standing still in research, since the winnowing must go on, a sense of failure or of only partial success will not be salutary unless it is accompanied by a determination to press forward with renewed and coordinated effort. This determination should be set in the forefront of the Association as it enters on its second hundred years of life.

What of the future of the Association in Australia? Dr. Scot Skirving has dealt with the growth of the Australian Branches as exemplified in New South Wales. He has shown that the same mind was in the founders of the Australian Branches as was in the pioneers of the Association in England, and the spirit of the Australian Branches at the present time is that of the Parent Body. There should thus be no doubt about their future. There is need of cohesion. Without it there will be a falling away. One who can speak with authority has recently said that many of the younger graduates in medicine have no enthusiasm for what is to them the old order of things, that they have no interest in schemes which were meat and drink to their fathers, that many of them have no set ideals and are looking for leaders. To such as these Dr. Scot Skirving's words may appeal. In the British Medical Association they will find ideals to govern their conduct, ideals which will be a stimulus for research, and which will justify their adventure into any of the newer avenues of preventive medicine they may wish to explore. In the Association they should also find leadership. But here a word must

be said to senior members of the Branches. Leaders are born, not made. All who assume leadership are not fitted for it, and seniority alone does not justify its assumption. Leaders must therefore be sought. If the younger graduates are to be brought into the fold of the Association, they must be made to feel that they are wanted, not that they are tolerated. When they have become members, the more promising of their number must be persuaded to take office, so that those fitted to become leaders may be discovered. In this way alone will the activities of the British Medical Association in Australia be representative of those of the whole medical profession. The Australian Branches will make the best possible use of the centenary meeting if their members, being of one mind and one faith, gather from it a stimulus to consolidate their ranks and thus to add lustre to the body from which they have sprung.

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### Current Comment.

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#### GRANULOPENIA.

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TERMINOLOGY is one of the knotty problems of medical teaching and literature. When the necessity arises to select a name for some morbid state or symptom complex, the pioneer is confronted with the difficulty of deciding whether he should be simply descriptive or whether some attempt should be made to indicate the cause in the term employed. The latter is the ideal, if possible; but the paths of medical history are strewn with examples of error in terminology of this type. Even purely descriptive terms are not entirely safe; for it may be found that the feature used in the construction of the name is really not at all characteristic of the condition in question. This difficulty is, of course, as wide as language itself; a rich tongue like English is full of forgotten remnants of history, quaint errors, and even romance in the very structure of its words. Words, as Trench says, are "the body which thoughts weave for themselves", and since thoughts must grow and change as knowledge comes, we must not be hard on those who give work to the medical lexicographer.

A good example of false terminology is the interesting condition known as "agranulocytic angina", or "agranulocytosis". It is now known that angina (itself a term with strained significance) or acute pharyngitis is not a necessary part of the syndrome. Moreover, "agranulocytosis" itself is a contradictory term, literally meaning an absence of increase of granulocytes, which might be normality. Of the names suggested, "granulocytopenia", or



more briefly, "granulopenia", seems to be most free from objection. To it may be added descriptive adjectives, such as "toxic", "infectious" *et cetera*, according to circumstances.

Using the name "granulopenia", G. M. Piersol and E. Steinfield have added to the already bulky literature on the subject, in a communication in which they survey the primary and secondary types, and add to the experimental studies made by numbers of observers on animals.<sup>1</sup> They define the primary variety as typically an acute and prostrating febrile illness, usually affecting a middle-aged woman, often associated with mild jaundice, and with necrotic lesions in the mouth, pharynx or vagina, or in other parts of the alimentary canal. The leucocytic response is profoundly depressed, and a count reveals that the polymorphonuclear cells reach as small a proportion of the total white cells as 10%, or may be absent. The red cells are but little affected. The mortality in the recorded cases is high. Secondary cases are those associated with local or general infections, or chemical poisoning (as with the use of benzene or drugs of the arsenobenzol series). Similar states occur in some blood diseases. It will be understood, of course, that a leucopenia, such as is constantly found in an infection like typhoid fever, really comes under the heading of "granulocytopenia", and apparently is due to the same process in much milder form; but clinically it bears no resemblance to the dramatic primary cases. Piersol and Steinfield, then, believe that the fatal cases, such as those first described by Schultz, are exaggerated instances of a reaction that is not uncommon in its lesser manifestations. This seems logical, and might provide some hope in the severer forms. One of their patients was a girl, aged seven years. She had an ulcerated mouth, some enlargement of the submaxillary lymph glands and spleen, and appeared very ill. Of the total leucocytes (2,000 in a cubic millimetre of blood), only 20% were neutrophile cells. The child's clinical condition improved, and a coincident rise in the numbers of white cells was noted, the count increasing to 10,200 in four days, and she made a good recovery, having received purely local treatment. Cases like this are not very uncommon, and certainly would appear to be aptly placed in the same category as the so-called agranulocytic anginas; but they are of a distinctly less toxic variety.

Similar cases are reported by A. B. Loveman following the administration of drugs of the arsenobenzol group.<sup>2</sup> One patient, a man, aged fifty-two years, after four injections, complained of a sore throat; exudate containing sloughing material was found on the fauces, and the leucocytes numbered 2,400 per cubic millimetre. Polymorphonuclear cells were practically absent; but a week later these granular cells made up 40% of a total of 5,850. The patient recovered completely. Loveman also records cases of thrombocytopenic purpura and

anæmia of an aplastic type occurring after arsenical injections.

The experimental work of Piersol and Steinfield is along the lines of other workers. They show that rabbits injected with bacteria or culture filtrates develop a leucocytosis, preceded by a preliminary leucopenia, that lasts some hours. In studying this well known phenomenon they have found by supravital staining that the older neutrophile cells disappear most rapidly and are replaced by younger cells. They point out that the experimental observations fit in well with the clinical states recognized in man. They also point out that granulopenia may be recurrent, and suggest an innate tendency towards this abnormal reaction in certain individuals. They quote Roberts and Kraeke, who found that out of 8,000 persons, 25% had some degree of granulopenia, and these became affected with fatigue and somnolence more readily than other people. Perhaps it is among these people that the dreaded fatal cases occur. Of course, even if this be so, there is no means of forestalling or foreseeing so severe an illness. Still, the possibility of this dangerous disease should always be thought of, especially when there is acute necrotic pharyngitis. Unfortunately, treatment in the severer cases seems of little avail; but experiences up to the present need not confirm an attitude of pessimism for the future, especially when it is realized that there are less lethal varieties of this curious ailment.

#### SALICYLATES IN ACUTE RHEUMATISM.

SOME interesting observations have been published by A. M. Master and A. Romanoff on the use of salicylates in acute rheumatism.<sup>1</sup> They point out that others have shown that the salicylates have no specific action in acute rheumatism, but are merely analgesics and antipyretics. They add that the belief is still prevalent that salicylates prevent cardiac complications and shorten the duration of the illness. Some authors have gone so far as to advise the use of salicylates for children predisposed to cardiac conditions. Master and Romanoff made a comparison of the state of the myocardium of thirty-three patients with acute rheumatism who were treated with salicylates, and of thirty suffering from the same condition who served as controls. It was found that the myocardium was involved in every instance whether salicylates were given or not. The duration of stay in hospital of patients in the control group was forty-six days and of those treated with salicylates forty-two days. A polycyclic course, the occurrence of pericarditis with and without effusion, involvement of the lungs and other viscera were practically the same in the two groups. Both quantitatively and qualitatively, the myocardial changes as revealed by the electrocardiogram showed a "surprising" coincidence in the two groups. The control group was treated by codeine or morphine.

<sup>1</sup> Archives of Internal Medicine, April, 1932.

<sup>2</sup> Annals of Internal Medicine, April, 1932.

<sup>1</sup> The Journal of the American Medical Association, June 4, 1932.

## Abstracts from Current Medical Literature.

### THERAPEUTICS.

#### Paravertebral Anæsthesia.

J. FRIGYESI (*Monatsschrift für Geburtshilfe und Gynäkologie*, January, 1932) describes in detail the various methods of local anæsthesia employed in gynaecology and obstetrics. He prefers to use the paravertebral route. After preliminary medication a needle is inserted at the level of the third lumbar vertebra at a point four fingers' breadth from the midline and at an angle of 45°. It will impinge against the body of the vertebra at a depth of eight centimetres, when 30 cubic centimetres of 0.5% "Novocain" solution are injected. This injection is repeated on the opposite side. The patient is then placed in the dorsal position and the subcutaneous tissues and rectal sheath are also infiltrated with the same solution. Before traction is exerted on the uterus further injections are made into the various ligaments supporting it. The author claims that with this combination of anæsthesia any gynaecological operation can be performed without pain. The article is well illustrated with colour pictures of experiments on the cadaver showing that the solution infiltrates the sympathetic fibres as well as the lumbar nerves.

#### Glandular Fever.

S. E. F. GOODING (*The Practitioner*, October, 1931) describes the symptoms of glandular fever or infective mononucleosis and discusses twenty-seven cases seen at the London Hospital. The condition occurs usually in children and young adults, has an acute onset with malaise, fever, and, later, enlargement of the lymphatic glands, especially in the cervical area. The epidemic alluded to here occurred in April and May in the East End of London. In only one instance were two members of the same family affected. Though the patients were treated in the general wards, there was no spread of infection; the condition can therefore be regarded as not contagious. The incubation period appears to be about two or three weeks. The ages in this epidemic were between eighteen and twenty-six years. Vincent's angina organisms and streptococci have been regarded as the infective agent by different observers; but there is no general agreement in this regard. Headache, photophobia, sore throat, hæmaturia, epistaxis and skin rashes were noted. As a rule, between ten and fourteen days after the onset enlargement of the lymph glands in the anterior and posterior triangles of the neck was noted; the glands enlarged rapidly; suppuration did not occur. The occipital and axillary glands enlarged as well as the cervical in many cases, and the inguinal and epitrochlear glands were

affected in five and two instances respectively. It is probable that the mediastinal and mesenteric glands were enlarged in other cases. In the excised glands there was evidence of hyperplasia and increase in the numbers of lymphocytes. The glands disappear slowly (not for five months in one case). The temperature rose to 39.4° C. (103° F.) in severe cases and remained high for four or five days. A remittent temperature up to 37.8° or 38.3° C. (100° or 101° F.) followed for two or three weeks. The spleen was palpable in four cases. The blood picture is characteristic; there is a moderate leucocytosis (up to 12,000 per cubic millimetre), with both relative and absolute increase of non-granular white cells; this lasts for three or four weeks. The Wassermann reaction was positive or partly positive in sixteen cases, and in others the Kahn test was positive; similar results with these tests have been reported by others. The differential diagnosis from mumps, rubella, typhoid or paratyphoid fevers, acute septic lymphadenitis, acute Hodgkin's disease and acute lymphatic leucæmia was made by considering the blood picture and by observation of the course of the disease.

#### Urinary Acidifiers.

J. M. SCOTT AND D. R. MITCHELL (*The Canadian Medical Association Journal*, December, 1931) describe the effects of urinary acidifiers other than acid sodium phosphate in the treatment of urinary infections. Ammonium benzoate, 1-2 grammes (twenty grains), with liquid extract of liquorice, syrup and water, was found effective in reducing the bacterial count of infected urine. Ammonium chloride had a similar effect, but was less palatable; it can, however, be given with hexamine, and this combination was found so effective as to become the standard treatment after prostatectomy. Bladder irritation and pain occurred in some cases, but persistence in treatment was rewarded with good results. The addition of hyoscyamus is suggested.

In the same journal J. M. Scott describes the use of acid ammonium phosphate, with the same excipients, and shows that this drug is a useful urinary acidifier; it cannot be used with hexamine, as formaldehyde is set free. The author suggests that acid ammonium phosphate be given a trial, as it is more pleasant to take in doses of 1-2 grammes (twenty grains).

#### Quinine Bi-Salicylo-Salicylate.

M. STEEL, A. GOERNER AND F. L. HALEY (*Journal of Laboratory and Clinical Medicine*, November, 1931) describe the chemical characteristics and clinical action of quinine bi-salicylo-salicylate. This is a white, odourless, slightly bitter, crystalline substance; it is almost insoluble in water, but in acid gastric juice it separates into quinine and salicylo-salicylate. The maximum tolerated dose of this preparation is greater

than that of quinine plus sodium salicylate or of other quinine preparations with salicylates; it is less toxic. The temperature is reduced and the respirations increased with larger doses. This substance does not upset digestion as do the salicylates. Clinically this new preparation was tested by the authors in forty cases of tonsillitis and twenty cases each of acute pharyngitis and influenza of the febrile respiratory type. In the majority of instances the temperature was reduced to normal in less than forty-eight hours with definite amelioration of symptoms. In the influenzal infections all signs of bronchial involvement cleared up within seventy-two hours. The doses employed were 0.72 gramme (twelve grains) of the drug every two hours for twelve doses. In none of these cases was any toxic action referable to quinine or salicylate noted. The authors conclude that this drug should be useful in painful and febrile diseases, such as rheumatism, tonsillitis, influenza and neuralgia.

#### Vaccine Therapy in Irritable Colonic Conditions.

J. G. MATEER AND J. I. BALTZ (*Annals of Internal Medicine*, February, 1932) have employed autogenous stool vaccines in the treatment of irritable colon. Organisms cultivated from the stool and to which the skin gave a positive reaction were used. The colon bacillus was the organism most frequently isolated. To eliminate favourable results not related to vaccine treatment, a group of sixty-eight patients who had resisted the older therapeutic measures, was carefully selected. Vaccine treatment tended not only to relieve distress and associated symptoms, but also permitted greater variety of diet and greater nervous activity. Better results were obtained by a prolonged course of dilute vaccines detoxified with sodium ricinoleate than when the stronger ordinary vaccines were administered over a shorter period. Vaccine therapy should not displace the older therapeutic measures of recognized value, but should be introduced after these measures have been fully utilized. Skin sensitivity in a control group of healthy individuals was tested. Sixty-five per centum showed skin sensitivity to one strain of colon bacillus and 60% to another. Skin sensitivity to stool vaccines was shown to decrease and even to disappear under vaccine therapy. Evidence is presented for and against a specific vaccine effect. A definite decision on this question is not justified. A control group of patients is being treated with non-specific milk protein.

#### Pernicious Anæmia.

R. M. MURRAY-LYON (*Edinburgh Medical Journal*, May, 1932) records the results of treatment of three patients with pernicious anæmia, one with sprue and one patient suffering from anæmia with the hæmorrhagic diathesis. "Campolon", a liver extract,

prepared by Günnslen, of Tübingen in Germany, was used. This extract is so potent that a daily dose of two cubic centimetres intramuscularly is sufficient to produce a good response. The three patients with pernicious anæmia did well on this treatment, showing a typical reticulocytosis on the seventh to tenth day, with rapid increase in red cells. The patient with sprue also improved, but relapsed as soon as the injections were intermitted, to improve again on their repetition. The fifth patient, who had a megalocytic anæmia with symptoms of weakness and epistaxis, also showed an increase in the number of red cells on "Campolon" treatment. No ill effects were noted. On decreasing or stopping the dose of "Campolon" there was an immediate relapse. Several German observers have commented favourably on this mode of treatment, and it has been said to benefit the spinal symptoms.

## NEUROLOGY AND PSYCHIATRY.

### Family Periodic Paralysis.

DAVID B. DAVIS AND S. MERRILL WELLS (*Journal of Nervous and Mental Disease*, February, 1932) present a report of a case of neurological interest diagnosed as family periodic paralysis. A maternal cousin and aunt were found to have suffered from the same form of illness. Physical examination and complete laboratory investigation of the patient revealed no abnormalities. The first attack commenced at the age of sixteen, when, after a wrestling match at school, the patient complained of fatigue and slight weakness in the legs. On attempting to walk upstairs, he suddenly became paralysed in both legs. Within a few moments he was paralysed in both arms; in fact, all over, except for the muscles of the eyes, face, jaws and throat and the sphincters of the rectum and bladder. This condition persisted for three days, after which he gradually recovered. The patient has had a number of milder attacks within the last six years, always initiated by physical exertion brought to the point of slight fatigue. Contrary to reports of other apparently similar cases, these attacks appear to have borne no relation to the type or quantity of food taken by the patient. No treatment was found to be of any value. No psychological investigation was undertaken.

### Peripheral Nerves in Amputated Extremities.

JOSEPH B. PRIESTLEY (*Journal of Nervous and Mental Diseases*, February, 1932) presents a histopathological study of peripheral nerves in the amputated extremities of patients who had suffered from arteriosclerotic gangrene. Blood sugar values were normal in all cases, and care was exercised to exclude any alien pathological condition which might have affected the blood vessels or nerves. The author concludes that in the peripheral

nerves of extremities amputated for arteriosclerotic gangrene are evidences of definite Wallerian degeneration and fibrosis. These changes appear more pronounced in the distal than in the proximal portions of a given nerve, and the degree of change is directly proportional to the degree of arteriosclerotic alteration of the vessels. This suggests a peripheral origin for degeneration, which probably depends on ischæmia for its production. It is further maintained that ischæmia of nerve fibres from numerous causes may result in pain of varying intensity, from mild neuritis to the excruciating pain typical of sudden vascular occlusion, and the ischæmia may represent the aetiological factor in many cases of neuritis. In support of this view it is observed that symptomatic improvement frequently results from treatment directed towards increasing the efficiency of the local circulation.

### Treatment of General Paralysis.

THE introduction of malaria in the treatment of general paralysis has given a fresh impetus to the question of neurosyphilis generally. Leland E. Hinsie and Joseph R. Blalock (*American Journal of Psychiatry*, November, 1931) give a detailed review of their treatment of 197 cases. The report covers three separate therapeutic agents: (i) malaria, (ii) tryparsamide, and (iii) combined malaria and tryparsamide. The remission rate for those treated by tryparsamide alone was 28.4%; that for those treated by malaria alone was 21%. Those treated by tryparsamide after malaria had failed to accomplish a remission amounted to 15.6%. The patients treated by tryparsamide showed slightly greater longevity. It was found that different parietic "types" responded differently to treatment, those described as "expansive" achieving the highest remission rate. A number of the so-called "simple dementing" type advanced slowly into a state of remission. It was further found that in the course of time the laboratory findings tended to become normal, the greatest incidence of normality occurring among those who received tryparsamide. Although up to four years after treatment the blood reaction had failed to occur in 77.7%, the cerebro-spinal reaction had failed to react in 83.1%, and the colloidal curve was normal in 93.7%, the authors were not able to trace any close parallelism between the laboratory findings and the clinical status.

### The Psychopathic Hospital.

C. MACFIE CAMPBELL (*Mental Hygiene*, Volume XIV, Number 4) makes a plea for the greater recognition of the value of the psychopathic hospital. The psychopathic hospital supersedes the lunatic asylum. Properly equipped, with clinical and laboratory facilities, it embodies the modern attitude to mental disorder as distinct from the mediæval attitude. It promotes a much needed rational

outlook on the part of the community to mental disorder generally. It places the treatment of mental disorder upon the same objective and scientific basis as that of ordinary medical and surgical illness. It offers scope for early recognition and treatment of mental disorder. In conjunction with, or as an integral part of a general hospital, the psychopathic hospital or department permits the study of the patient's personality and furnishes psychiatric data of equal importance to the radiogram or the Wassermann test. It functions as a centre for psychopathological research and offers the medical student suitable opportunities for training in this fundamental branch of his profession.

### Hæmangioma of Vertebra.

F. S. NATTRASS AND DONALD RAMAGE (*Journal of Neurology and Psychopathology*, January, 1932) give a detailed report of a case of hæmangioma of the vertebra occurring in a man of fifty-one. The prodromal symptoms were a sense of increasing fatigue in the legs after walking for about three months; the symptoms then became abruptly worse and the feet felt numb. Examined two months after the onset, the gait was distinctly ataxic and slightly spastic. The abdominal reflexes were impaired, and there was diminished sensibility to pin-prick up to and including the ninth thoracic segmental area on the right and the first lumbar area on the left. Biochemical examination of the spinal fluid was inconclusive. Jugular compression caused only a slight increase in flow, and lipiodol introduced by cisternal puncture was completely arrested at the upper border of the eighth thoracic vertebra. The authors conclude that hæmangioma of the vertebra, which appears commoner in females, presents a compression syndrome when it encroaches upon the spinal canal; but although this syndrome is without distinctive characteristics, a sudden onset or exacerbation of symptoms is sometimes suggestive.

### The Ocular Fundi in Epileptics.

HARRY COSTEFF (*American Journal of Psychiatry*, January, 1932), who examined the ocular fundi of 114 epileptics, found that 53 were distinctly abnormal. The most frequent state encountered was that of venous engorgement, which accounted for 55.1% of the total pathological change found. The author concludes that the relatively frequent incidence of passive hyperemia in the ocular fundi of epileptics is evidence of existence of intracranial hypertension, which is believed to be the pathological basis of every convulsion. He further draws attention to the fact that a condition of optic atrophy was found in old-standing epileptics with mental deterioration. Other conditions, found far less frequently, although sometimes associated with passive hyperemia, were chorioiditis, iritis, retrobulbar neuritis, papillitis and coloboma of the optic nerve.



## British Medical Association News.

### SCIENTIFIC.

A MEETING OF THE VICTORIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the Geelong Hospital, Geelong, Victoria, on March 19, 1932. The meeting took the form of a series of clinical demonstrations by members of the honorary staff.

#### Dislocation of the Cuboid Bone.

Dr. J. E. PIPER showed a patient whose horse had rolled on him. His foot had caught in the stirrup and the cuboid bone had been dislocated into the centre of the plantar surface of the foot. The bone was rotated so that its dorsal surface became lateral. Satisfactory reduction was obtained by means of open operation.

#### Bronchiectasis.

Dr. Piper also showed a girl, aged eleven years, who had had attacks of hæmoptysis during the previous three summers. Her general health was quite good, and she had lost no weight. There was no history of previous rheumatic fever or diphtheria. There was a systolic murmur at the apex, and the heart was slightly enlarged. X ray examination revealed evidence suggestive of pulmonary tuberculosis. There was no response to the von Pirquet test.

Dr. M. D. SILBERBERG said that the patient admitted having had growing pains last year, but, in his opinion, that was not sufficient to account for her present heart condition. The X ray appearances were suggestive of dilated bronchioles in the base of the right lung, and he suggested that as the cause of the hæmoptysis.

Dr. L. HURLEY agreed with the diagnosis of bronchiectasis. The patient stated that she had a good deal of sputum, particularly in the early morning, most of which she swallowed. She also had some clubbing of her fingers, which was not cardiac in origin, for other signs of cardiac insufficiency were absent.

Dr. L. A. I. MAXWELL agreed with previous speakers as to diagnosis. He suggested X ray examination of the nasal sinuses as a possible means of revealing the source of infection.

Dr. S. O. COWEN agreed with the diagnosis of bronchiectasis, but was of the opinion that before the sinuses were investigated, bronchoscopy should be performed, even before lipiodol injection, in order to exclude the possibility of the presence of a foreign body.

#### Dislocated Semilunar Cartilage.

Dr. Piper's third patient was a middle-aged man who had been operated on twenty years previously, when part of the internal semilunar cartilage of the knee had been removed. The patient was perfectly well until about nine months before the meeting, when, as a result of an accident, his old trouble recurred. At the second operation the remainder of the internal semilunar cartilage was found to be loose and was removed. The patient had been walking about for some months at the time of the meeting, and had perfect movement.

Dr. COLIN MACDONALD stated that the X ray picture showed the patient to be suffering from *osteocondritis desiccans*, a condition first described by Franz Kernig in 1906, in which subchondral separation of bone from the medial condyle occurred. Kernig had thought the condition was due to injury involving the crucial ligaments resulting in aseptic necrosis from interference with the blood supply. Littlejohn, of Melbourne, thought the condition resulted from direct violence.

Dr. A. E. COATES asked whether Dr. Piper had noted at the operation any tendency to degeneration in the medial meniscus. Recent research had shown that a fibrous shelf tended to be formed as an ingrowth from the joint capsule following such operations. In a recent issue of *The Journal of Anatomy* McConnell had drawn an interest-

ing parallel between the cartilages of the knee joint and Michel pads used in turbines, the function of both being to prevent friction and increase lubrication. He asked whether the portion removed was actually cartilage or was it the fibrous shelf resulting from the first operation.

Dr. Piper replied that such a question had not been in his mind at the time of the operation, and he was unable to say definitely what was the structure of the portion removed.

#### Perinephric Abscess.

Dr. Piper also showed a boy, aged fifteen years, who had had attacks of pain in the region of the right kidney. His temperature had fluctuated up to 40° C. (104° F.). A calculus was removed from the bladder when the child was six years of age. Examination by means of X rays revealed calculi of the right kidney, one calculus filling up the pelvis of the kidney. The urine was loaded with pus cells; some red blood cells and *Bacillus coli* were present. Tubercle bacilli were not found. The leucocytes numbered 17,200 per cubic millimetre of blood. At operation a large perinephric abscess was opened and the kidney removed with difficulty. The kidney was practically a sack containing pus and calculi. The patient made an uninterrupted recovery and gained considerable weight.

Dr. KEITH HALLAM drew attention to two points exemplified by the X ray photographs: (i) The broad shadow of gas above the pus in the abscess; (ii) the obliteration of the shadow of the psoas muscle on the side of the abscess. Both points were characteristic of perinephric abscess.

Dr. ALAN HAILES asked radiologists present whether the bladder shadow did not indicate the presence of a phosphate deposit on the bladder wall, such as was felt occasionally during prostatectomy.

Dr. MARY DE GARIS said that it was important for the child's future to insure, if possible, that calculi did not develop in the remaining kidney. She referred to the influence of diet, particularly in connexion with the observations of McCarrison on the effect of diet on the incidence of renal calculus in India. She suggested that the diet of the child should be regulated, as his life depended on it.

Dr. L. A. I. MAXWELL inquired as to whether the stone consisted of calcium oxalate. If so, it was important to remember that excess of carbohydrates in the diet increased the liability to oxalate formations. As calcium oxalate was more soluble in the presence of magnesium salts, he suggested the administration of the latter in association with an oxalate-free diet. Such items as spinach and tomatoes should be omitted. The urine should be kept alkaline as far as the state of the bladder permitted.

Dr. HENRY MORTENSEN thought that the history, together with the size of the calculus, suggested that it consisted of phosphates and had been due to infection. If so, the risk that another would form on the sound side was not so great as had been suggested.

#### Septic Arthritis.

Dr. JAMES showed a patient who had suffered from septic arthritis of the knee joint. Dr. James's object was chiefly to demonstrate: (i) the utility of opening the knee joint in certain cases, (ii) that occasionally a useful limb could result after an apparently hopeless condition.

In December, 1931, the patient received an injury to his left knee. Some days later a piece of wood was removed from the popliteal space. The joint swelled, and the patient, who was in Mansfield, became acutely ill. Fifteen days from the first operation the joint was opened. The patient, who was then delirious and had a temperature of 40.5° C. (105° F.), became rapidly worse, in spite of a free discharge from the joint. Three days later the joint was widely opened by dissection round the patella and reflexion of a flap upwards. Much pus was liberated. A Carrel-Dakin tube was inserted and a Thomas splint applied. One week later the infection had extended high into the thigh and the patient was practically moribund. Under morphine and light ether anaesthesia the thigh was

freely incised up to the level of the great trochanter. On February 2, a week following replacement of the patellar flap, the Thomas splint was removed, the leg completely encased in plaster, and the patient transferred to Geelong Hospital. The leg was then put in gauze and fresh plaster and left until the plaster became foul and sodden. Gauze and plaster were again applied and left until foul. By this time considerable healing had occurred. A gutter splint of scrim and plaster was then applied, with the patient in a prone position. At the time of the meeting the joint was ankylosed and the wounds healed; but there was a slight foot-drop from involvement of the peroneal nerve.

Dr. James remarked that in this case he had followed the method taught him by Dr. Balcombe Quick at the Alfred Hospital.

Dr. VICTOR HURLEY congratulated Dr. James on his result. The choice of method in such cases was a debatable problem. The method used by Dr. James was advocated by Colonel Gray during the Great War. It was almost impossible to provide adequate drainage through lateral incisions. There were objections to Quick's method. There was a tendency for the infection along the calf of the leg and the thigh to persist. It was also a very painful method, necessitating the almost continuous administration of morphine, and there was a doubt whether ankylosis would finally be achieved. This was an unusually good result. He thought the foot-drop was probably a result of plaster pressure on the peroneal nerve, which could happen very easily. It was not gross; the nerve was obviously functioning and recovery could be expected in from six to twelve months.

Dr. W. KENT HUGHES stated that foot-drop occurred only in the presence of an already short *tendo Achillis*—part of a congenital tendency for contraction of fibrous tissue generally. He thought that the foot-drop in this case was entirely due to position and pressure by bed-clothes. To hasten recovery, he suggested dividing the *tendo Achillis* close to its insertion, by the old method. For many years he had abandoned the Z-shaped incision, which was the method chosen in the only cases he had seen among hundreds with weak tendons following division.

Dr. B. MILNE SUTHERLAND recalled his experience in the early part of the Great War. He had appreciated then what a truly septic joint could result from lateral tube drainage. Professor Watson had demonstrated on the amputated limbs how the tubes simply lay in a canal, providing no inlet from surrounding infected areas. Professor Watson had advocated throwing back a patellar flap, and improved results had followed. No one with that experience would attempt tube drainage.

Dr. B. T. ZWAR congratulated Dr. James, both on his result and also on this method of presenting his case, by reading his notes before the patient entered. In this way more details could be given and a fuller discussion follow. He considered this practice advisable as a routine.

Dr. H. D. STEPHENS suggested the use of a light toe-raising spring to hasten recovery from the foot-drop. That type of peroneal paralysis in children was materially shortened in duration by such a method; a calf band could be employed, with a wire descending from either side to support the spring passing beneath the foot.

## Correspondence.

### DRAINAGE WITH IRRIGATION AFTER PROSTATECTOMY.

SIR: Dr. Harris's criticism of my paper, for which I thank him, shows that I have not made my meaning clear, and I should be glad of an opportunity for further explanation.

In the first place, with regard to hæmorrhage. I had no idea of advocating the cautery as a substitute for ligature or suture ligature. Sometimes, however, super-

ficial spots or patches of oozing remain, which are usefully treated by a light touch of the cautery.

His most serious criticism of the method, however, is the possibility of injuring the sphincter or sphincters, with resulting incontinence. If this were so, it would be enough in itself to condemn the method.

I can assure him, however, that there is no need for anxiety about the sphincters if the introduction of the perineal tube is carried out in the manner suggested in the paper. With the two finger tips of the left hands passed into the prostatic sac from above, and a catheter lying in the urethra, the relative position of the parts and the point of the clamp can be so distinctly felt that the latter can be easily and accurately guided into the most dependent part of the prostatic sac well behind the bladder outlet.

I wish particularly to stress the value of these two finger tips.

Occasionally a small, tough, unshellable prostate is encountered, and in such cases I think it is much more satisfactory to resort to a perineal operation.

The two fingers of the left hand in the bladder then become of the greatest assistance, serving to define and depress the portions of prostate to be dissected out or snipped away with scissors from below. They give a sense of accuracy and safety not obtainable with any instrumental retractor. To do the operation without their assistance is somewhat comparable to making a *per vaginam* examination without a hand above the pubis.

After a long experience, including many different techniques, I hold the opinion that this one gives me the greatest freedom from post-operative trouble.

I have been so impressed with the comfort of the patient and the greater simplicity of after-treatment and nursing that I should be sorry to see the method condemned on theoretical grounds alone.

In conclusion I shall briefly quote a case recently done by me at Penrith, and for the progress notes I am indebted to Dr. Higgins.

In this case two fairly large prostatic lobes were shelled out and the sac left open. Although not in any sense unique, it is mentioned to show that a completely satisfactory result can be attained in this way.

Dr. Higgins's report, dated June 23, 1932:

H.B., aged sixty-nine years. Admitted to the Nepean District Hospital on March 18, 1932. Operation April 5 under ether administered by Dr. Barrow. Perineal and irrigating tubes removed April 11. Micturition normal directly tube removed. Urine test showed no abnormality. Suprapubic wound healed by first intention, and sutures removed April 15. Out of bed April 19. Left the hospital April 23, thoroughly cured, and he has been splendid ever since. From the first day after the operation he experienced no discomfort.

Yours, etc.,

J. MORTON.

Sydney,  
July 2, 1932.

## Proceedings of the Australian Medical Boards.

### QUEENSLAND.

THE undermentioned have been registered, pursuant to the provisions of *The Medical Act of 1925*, of Queensland, as duly qualified medical practitioners:

Flecker, Hugo, M.B., Ch.M., 1908 (Univ. Sydney), M.R.C.S. (England), L.R.C.P. (London), 1911, F.R.C.S. (Edinburgh), 1912, Cairns.

Steven, Arthur Raphael, M.B., Ch.B., 1916 (Glasgow), Brisbane.

Madden, John Patrick Cawley, M.B., 1922 (Univ. Sydney), Mungindi.

Meagher, John Sheehy Luxford Aloysius, M.B., B.S., 1923 (Univ. Melbourne), Brisbane.  
 Morris, John Glasgow, M.B., B.S., 1932 (Univ. Sydney), Brisbane.  
 Hill, Leslie George, M.B., Ch.M., 1926 (Univ. Sydney), Sandgate.  
 Yarad, Fred Callile, M.B., B.S., 1928 (Univ. Sydney), Proserpine.

#### Restoration to the Register:

Smith-Guthridge, John, F.R.C.P. and S. (Edinburgh), L.F.P.S. (Glasgow), 1899, Jundah.

### Obituary.

#### CHARLES HENRY OLIVER.

WE regret to announce the death of Dr. Charles Henry Oliver, which occurred on July 1, 1932, at Cheltenham, New South Wales.

### Medical Appointments.

Dr. G. F. Lumley has been appointed Assistant Medical Officer, Mental Diseases Hospital, New Norfolk, Tasmania.

Dr. G. S. S. Hayes has been appointed Medical Officer for Venereal Diseases, Department of Public Health, Brisbane, Queensland, pursuant to the provisions of *The Health Acts*, 1900 to 1931.

Dr. H. K. Fry (B.M.A.) has been appointed an Official Visitor to the Mental Hospital at Parkside, South Australia.

Dr. C. T. Piper (B.M.A.) has been appointed an Honorary Medical Officer to the Wallaroo Hospital, South Australia.

Dr. R. S. Rogers (B.M.A.) has been appointed President of the Medical Board of South Australia, under the provisions of the *Medical Practitioners' Act*, 1919, South Australia.

Dr. J. K. Adey (B.M.A.) has been appointed Medical Superintendent of the Hospital for the Insane and the Receiving House, Royal Park, Victoria, pursuant to the provisions of the *Lunacy Act*, 1928, Victoria.

Dr. D. D. Cade (B.M.A.) has been appointed Medical Superintendent of the Hospital for the Insane at Sunbury, Victoria, pursuant to the provisions of the *Lunacy Act*, 1928, Victoria.

Dr. A. Curtis (B.M.A.) has been appointed Medical Superintendent of the Hospital for the Insane at Beechworth, Victoria, pursuant to the provisions of the *Lunacy Act*, 1928, Victoria.

Dr. W. Davis (B.M.A.) has been appointed to be Certifying Medical Practitioner at Fitzroy, Victoria, for the purposes of the *Factories and Shops Act*, 1928.

### Medical Appointments Vacant, etc.

FOR announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xvi.

LAUNCESTON PUBLIC HOSPITAL, TASMANIA: Resident Medical Officer (male).

THE WOMEN'S HOSPITAL, SYDNEY, NEW SOUTH WALES: Honorary Officers.

### Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 135, Macquarie Street, Sydney.	Australian Natives' Association. Ashfield and District United Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham United Friendly Societies' Dispensary. Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney. North Sydney Friendly Societies' Dispensary Limited. People's Prudential Assurance Company Limited. Phoenix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association, Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Brisbane Associated Friendly Societies' Medical Institute. Mount Isa Mines. Toowoomba Associated Friendly Societies' Medical Institute. Chillagoe Hospital. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL are advised, in their own interests, to submit a copy of their agreement to the Council before signing.
SOUTH AUSTRALIAN: Secretary, 207, North Terrace, Adelaide.	All Lodge Appointments in South Australia. All Contract Practice Appointments in South Australia.
WESTERN AUSTRALIAN: Honorary Secretary, 65, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (Wellington Division): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

### Editorial Notices.

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